2013 GEOLOGICAL, GEOCHEMICAL AND DIAMOND DRILLING REPORT ON THE ORO PROPERTY

MAYO MINING DISTRICT, YUKON
MAPSHEETS: 105O/02, 03, 06, 07
UTM COORDINATES: 7020000 NORTH, 402500 EAST, ZONE 9N, NAD 83

QUARTZ CLAIMS WORKED

CLAIM NAME	TAG #
ORO 3	YD31353
ORO 15	YD31365
ORO 17 – ORO 19	YD31367 – YD31369
ORO 32	YD31382
ORO 185	YD105039
ORO 207	YD105061
ORO 256	YD105110
ON 193 – ON 194	YE42793 – YE42794
SOL 143	YD105595

DATES OF WORK: July 11 to September 8, 2013

For

OPERATOR: GOLD FIELDS SELWYN EXPLORATION CORPORATION
400 – 1155 ROBSON STREET
VANCOUVER, BC, V6E 1B5

and

OWNER: COLORADO RESOURCES LTD.
110 – 2300 CARRINGTON ROAD
WEST KELOWNA, BC, V4T 2N6

by

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April 15, 2014

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SUMMARY

The Oro Property, covering approximately 19,207 hectares, is located in the mineral-rich MacMillan Pass area of the Yukon Territory. Nearby and adjacent properties are owned by Newmont, HudBay, Teck, Carlin-Constantine, Golden Predator and Ryan Gold. The property was originally acquired due to its favourable geological setting along the Yukon "Carlin Gold" Trend which also hosts ATAC's Rau, Osiris and Tiger Zones. The Oro Property hosts the historic Neve-Brick Minfile (105O/032) occurrence which contains orpiment and realgar mineralization, previous drill results up to 0.50 g/t Au over 65.9 metres and has documented comparisons to Nevada's Carlin belt.

Located on the eastern margin of the Selwyn Basin, the Oro Property is underlain by Ordovician to Triassic sedimentary strata which are intruded by variably altered Cretaceous felsic sills and dykes. Cretaceous compressional tectonics have isoclinally folded and faulted the sedimentary strata.

Prior to Colorado Resources Ltd. ("Colorado") acquiring the Oro Property, it had been worked by AGIP Canada Ltd. from 1979 to 1989. No work had been done on the property from 1989 until Colorado acquired it by optioning and staking in late 2010 and early 2011. Previous work on the property by AGIP included geology, geochemistry, geophysics, trenching and diamond drilling. Prior drilling concentrated on the Neve-Brick Minfile area which includes the J.O., Saddle and Canol Zones. Between 1977 and 1984, on the eastern portion of the claim block, Hudson Bay Exploration and Mining and Cominco Ltd. conducted geochemical programs targeting Sedex Pb-Zn-Ag-Ba mineralization.

After property acquisition, in 2011 and 2012, Colorado conducted an airborne geophysical survey, soil, silt and rock sampling programs, prospecting, geological mapping and mini-excavator trenching. This exploration program was conducted with the intent of expanding previously reported mineralization and continuing exploration to discover new mineralized zones. The Company's systematic exploration work defined several strong, drill ready, multi-kilometre long geological, geochemical and geophysical targets on the Oro Property.

In May 2013, Gold Fields Selwyn Exploration Corporation ("Gold Fields") entered into an option agreement with Colorado on the Oro Property. The agreement appointed Gold Fields as operator and during 2013 a 13 hole diamond drilling program was completed. Coincident with the diamond drilling program, rock sampling was undertaken over several geochemically anomalous areas.

Although the results of the 2013 exploration program returned modest gold values the property retains sufficient widespread untested geochemically and geophysically anomalous target zones to require additional exploration.

INTRODUCTION

The Oro Property, containing the historic Neve-Brick minfile occurrence (105O/032), is located in the MacMillan Pass area of eastern Yukon. The central portion of the property was acquired by Colorado Resources Ltd. ("Colorado") in late 2010 and expanded by staking in early 2011.

Colorado acquired this property after studying the regional geological trends and examining historic minfile records and prior company assessment reports documenting Carlin style gold mineralization potential on the property. After property acquisition, Colorado conducted extensive exploration programs in 2011 and 2012, including an airborne geophysical survey, ASTER image analysis, soil, silt and rock sampling program, prospecting, geological mapping and mini-excavator trenching.

Exploration work expanded previously reported mineralization, discovered new mineralized zones, and led to a better understanding of the geological framework across the Oro Property.

In 2013, Gold Fields Selwyn Exploration Corporation ("Gold Fields") conducted a 13 hole diamond drill program to test a number of anomalous target areas with one or more drill holes. The 2013 exploration program is the subject of this report.

LOCATION, ACCESS, PHYSIOGRAPHY, AND CLIMATE

The eastern end of the Oro Property is located 25 kilometres west of the MacMillan Pass Airstrip and the North Canol Highway in eastern Yukon (Figure 1). The claims cover an area of approximately 19,207 hectares and are centred at UTM coordinates 7020000 North, 402500 East in Zone 9N (NAD 83), within NTS map sheets 105O 02, 03, 06 and 07.

Access to the Oro Property is via helicopter from the MacMillan Pass Airstrip or Colorado's camp located 8 kilometres south of the airstrip along the North Canol Highway. The camp is road accessible from the community of Ross River, located approximately 210 kilometres to the southwest.

A secondary road (the Nidd Road) branches westerly off the North Canol Highway 2 kilometres south of the MacMillan Pass airstrip and travels west for 20 kilometres, terminating at the old Nidd Property camp near the Oro Property border. This road has not been used in several years and both the road and the bridge crossing the South MacMillan River require rehabilitation.

Situated in the Hess Mountains, topography is moderate to rugged with elevations ranging from 950 to 1800 metres above sea level, yielding a maximum relief of 850 metres. The mountain and ridge slopes of shale felsenmeer and scree are generally steep. A resistive weathering, chert pebble conglomerate unit forms more rugged ridges.

Vegetation is typical of eastern Yukon with treeline at about 1350 metres above sea level. Vegetation in the valleys is characterized by spruce and balsam with shrubs, alpine grasses and moss at lower elevations. Water on the property is restricted to the larger creeks in late July and early August. Sufficient water sources are available for any exploration or mining requirements.

The climate in the area of the Oro Property is variable with cool summers and long, cold winters. During the summer (June to August) temperatures range from 5 to 20°C with 20 to 22 hours of daylight. Winter weather in this region may commence after August 15th with snow, high winds, cooler temperatures, and decreasing daylight.

CLAIM INFORMATION/OWNERSHIP

The Oro Property is located within the Mayo Mining District and consists of 919 quartz claims totaling 19,207 hectares (Figure 2).

TABLE I
QUARTZ CLAIM NAMES AND TENURE NUMBERS

CLAIM NAME	TAG #	EXPIRY DATE
ORO 1 – ORO 48	YD31351 – YD31398	April 4, 2023
ORO 49 – ORO 318	YD104903 – YD105172	April 4, 2025
ORO 319 – ORO 330	YD105441 – YD105452	April 4, 2025
SOL 1 – SOL 206	YD105453 – YD105658	April 4, 2023
SNG 1 – SNG 4	YE39295 – YE39298	April 4, 2025
OS 19 – OS 32	YE42019 – YE42032	April 4, 2024
OS 51 – OS 64	YE42051 – YE42064	April 4, 2024
OS 83 – OS 96	YE42083 – YE42096	April 4, 2024
OS 115 – OS 128	YE42115 – YE42128	April 4, 2024
OS 147 – OS 152	YE42147 – YE42152	April 4, 2024
OS 171 – OS 176	YE42171 – YE42176	April 4, 2024
OS 192	YE42192	April 4, 2025
OS 194	YE42194	April 4, 2019
OS 196	YE42196	April 4, 2025
OS 198	YE42198	April 4, 2025
OS 200	YE42200	April 4, 2025
OS 202	YE42202	April 4, 2025
OS 204	YE42204	April 4, 2025
OS 205	YE42205	April 4, 2024
OS 206	YE42206	April 4, 2025
OS 207	YE42207	April 4, 2024
OS 208	YE42208	April 4, 2025
OS 209	YE42209	April 4, 2024
OS 210	YE42210	April 4, 2025
OS 225 –OS 232	YE42225 – YE42232	April 4, 2025
OS 251 – OS 256	YE42251 – YE42256	April 4, 2025
OS 275 – OS 278	YE42275 – YE42278	April 4, 2025
OS 297 – OS 300	YE42297 – YE42300	April 4, 2025
OS 319 – OS 322	YE42319 – YE42322	April 4, 2025
OS 341 – OS 344	YE42341 – YE42344	April 4, 2025
OS 363 – OS 366	YE42363 – YE42366	April 4, 2025

CLAIM NAME	TAG #	EXPIRY DATE
OS 387 – OS 388	YE42387 – YE42388	April 4, 2025
OS 404	YE42404	April 4, 2021
OS 406	YE42406	April 4, 2021
OS 408	YE42408	April 4, 2021
OS 423 – OS 426	YE42423 – YE42426	April 4, 2021
OS 441 – OS 442	YE42441 – YE42442	April 4, 2021
ON 49 – ON 50	YE42649 – YE42650	April 4, 2025
ON 67 – ON 72	YE42667 – YE42672	April 4, 2025
ON 89 – ON 94	YE42689 – YE42694	April 4, 2025
ON 111 – ON 118	YE42711 – YE42718	April 4, 2025
ON 112	YE43112	April 4, 2025
ON 114	YE43114	April 4, 2025
ON 116	YE43116	April 4, 2025
ON 118	YE43118	April 4, 2025
ON 120	YE43120	April 4, 2025
ON 122	YE43122	April 4, 2025
ON 124	YE43124	April 4, 2025
ON 133 – ON 140	YE42733 – YE42740	April 4, 2025
ON 155 – ON 166	YE42755 – YE42766	April 4, 2025
ON 181 – ON 196	YE42781 – YE42796	April 4, 2025
ON 209 – ON 228	YE42809 – YE42828	April 4, 2025
ON 241 – ON 262	YE42841 – YE42862	April 4, 2025
ON 273 – ON 294	YE42873 – YE42894	April 4, 2025
ON 305 – ON 326	YE42905 – YE42926	April 4, 2025
ON 337 – ON 360	YE42937 – YE42960	April 4, 2025
ON 369 – ON 392	YE42969 – YE42992	April 4, 2025
ON 401 – ON 426	YE43261 – YE43286	April 4, 2025
ON 435 – ON 462	YE43295 – YE43322	April 4, 2025

HISTORY AND PREVIOUS WORK

Neve-Brick Area

The majority of historic work conducted on the Oro Property was done by AGIP Canada Ltd. in the area of the Neve-Brick minfile occurrence (105O 032). The first documented work by AGIP consisted of a stream sediment sampling program in 1980. This work was targeting Sedex lead-zinc-silver mineralization as found on HudBay's Tom Property. Gold was not analysed during this program, however they did find a few anomalous values of zinc and barium (Beauchamp, 1980).

AGIP returned in 1981 with a mapping and sampling program (Garagan, 1981). Along with preliminary geological mapping, AGIP located two outcrop occurrences of realgar-orpiment±stibnite veining associated with intrusive dykes. A small soil geochemical survey indicated anomalous areas of gold, silver, arsenic and antimony.

In 1982, two concurrent exploration programs were carried out on the Neve and Brick claims by AGIP. On the Neve claims soil samples and talus fines were collected in three areas, with the conclusion that only a few weak anomalies were found which could probably be explained by local veining. On the Brick claims a trench was dug across a precious metal soil geochemical anomaly. Elevated values in gold, silver, arsenic, antimony and mercury in the trench samples relate to enrichment in veins cutting highly altered quartz-feldspar porphyry dykes. Some enrichment may also be due to low grade precious metal content disseminated within the intrusive rocks (Garagan, 1982).

Also in 1982, AGIP used a small pack-sack drill to put in 117 overburden holes to sample bedrock chips and/or soil at the bedrock-soil interface. Samples were drilled at 5 metre centres in 3 anomalous zones within the Brick claims. In most cases the deeper values were higher than the surface samples, but were also much more variable due possibly to the erratic nature of the mineralization (Garagan, 1983).

In 1983, AGIP conducted a soil sampling and trenching program. Soil sampling of the new 1983 grid located a new zone ("J.O. Zone") of highly anomalous gold values in soil and talus across a steep slope facing northwest. The J.O. Zone soil anomaly is an extension of the Saddle Zone geochemical anomaly, although the zones seem to be geologically distinct. The soil anomalies are defined by the 100 ppb gold contour; the main part of the J.O. Zone anomaly consists of two distinct anomalies exceeding 1000 ppb gold in soil (these anomalies are 150 metres and 70 metres long, respectively). Some soil samples within the J.O. Zone exceed 5000 ppb gold. Maximum gold values in grab samples of rock in the J.O. Zone reached 1.44 g/t. Gold mineralization seems related to the degree of fracturing (Robertson, 1984).

Three trenches were excavated across the strongest parts of the J.O. Zone soil anomaly. Results of gold analyses of soil and rock samples from the trenches confirm the gold values found in surface soil samples of the J.O. Zone. The best gold grades and the most difficult trenching conditions are associated with strongly fractured sooty carbonaceous shale. The best results were from trench 83-1, where soil and rock composite grab samples were collected at 3 metre intervals over its 44 metre length. All but two soil samples contain greater than 1000 ppb gold, with the best result being 4.74 g/t gold. The rock sample results were lower, with the best result being 655 ppb gold. All samples contained greater than 100 ppb gold and 5000 ppb mercury.

AGIP followed up these early soil sampling and trenching programs with diamond drilling programs in 1985 and 1988. In 1985, a total of 1257.3 metres was drilled in 9 BQ size holes, with 5 of these holes being abandoned before reaching their target depths. Drilling results indicate the weighted average for all anomalous gold and silver values is 0.31 g/t gold and 2.59 g/t silver over an average true width of 30.4 metres. The anomalous gold-silver values correspond to intense fracturing, clay altered fault gouge and veining within black carbonaceous shale and siliceous graphitic-carbonaceous shale. The higher gold-silver values generally correlate with increased structural disruption, lost core and/or increased veining (Aupperle, 1985).

In 1988, 10 NQ and HQ sized diamond drill holes totalling 1229.8 metres, were drilled by AGIP. Results of this drill program have been summarized by Hulstein and Keyser (1989):

"Gold mineralization has been identified at two areas: (1) the Canol Zone and (2) the J.O. - Saddle Zone. Mineralization and alteration appear to be related to faulting, fracturing and quartz-carbonate veinlets and stockworks temporally and spatially related to Cretaceous dykes and sills. Disseminated pyrite,

realgar, orpiment, stibnite, arsenopyrite and proustite-pyrargyrite are found in narrow quartz veinlets hosted by altered quartz monzonite sills and dykes and adjacent hornfelsed and bleached sediments.

The Canol Zone, approximately one kilometre long by 50-60 metres wide, is underlain by silty limestone and shales. It was drill tested for the first time in 1988. Although no significant anomalous gold values were intersected in the silty limestone unit, anomalous gold values (up to 0.488 g/t over 2.70 metres) were intersected in faulted and sheared shales.

The J.O. - Saddle Zone, approximately 850 by 300-475 metres in area, is underlain by variably hornfelsed and bleached shales and altered quartz monzonite sills and dykes. The Zone is bounded and cut by faults which are locally anomalous in gold. Even though the 1988 drilling had better core recoveries than the 1985 drilling, gold values and widths were similar. The best 1988 results were 5.30 metres of 0.699 g/t gold in a quartz-feldspar porphyry, including 1.108 g/t over 1.20 metres. Another interval returned 0.574 g/t gold over 30.10 metres."

After 1988, until Colorado acquired the property in 2010, no exploration was conducted in this area.

SOL Claims

Between 1977 and 1984, Hudson Bay Mining and Exploration and Cominco Ltd. put in a series of small soil grids over what is now the eastern half of the Oro Property, in the area currently covered by the SOL claims. Both companies were exploring for Sedex style Pb-Zn-Ag and/or Ba mineralization and obtained localized high soil values for each of these elements. Hudson Bay's exploration work was located on the northern portion of Colorado's SOL claims, and interestingly showed some high areas of mercury values in soil (the only other element for which they analysed). They also obtained some significant silver values in soil which correlate well with Colorado's newly identified Golden Ridge and North Steel Zones.

Other Minfile Occurrences

Four additional minfile occurrences have been documented on the Oro Property. Three of these are Sedex style bedded barite occurrences (Gow 105O 029, Minorco 105O 046 and Stroshein 105O 045) and one unknown deposit type (Fal 105O 042).

Previous Work by Colorado Resources Ltd.

Work completed on the Oro Property by Colorado in 2011 and 2012 consisted of airborne geophysics, ASTER image analysis, silt and soil sampling, prospecting and rock sampling, geological mapping and trenching.

Fugro Airborne Surveys conducted a 2114 line kilometre heli-borne magnetic and electromagnetic (Dighem) survey. Survey lines were spaced 200 metre apart with perpendicular tie lies at 2000 metre spacing. Total Magnetic Intensity plots show a prominent magnetic high feature on the west side of the claim block. This may be related to a buried intrusive, but no outcrop evidence supports this theory. Neither is there elevated soil geochemistry in this area. A second prominent, albeit smaller, magnetic high is located in the vicinity of the Oro Main Zone. This magnetic feature is probably related to the abundant Cretaceous dykes located in this area, which are likely feeders from a buried intrusive body. A few smaller, less significant magnetic high features trend across the southeastern portion of the Oro Property.

The Oro Main Zone also lies along a strong structural break as shown by the steep resistivity gradients. Cross structures, which are important in Carlin gold systems are visible trending through this area. The Golden Ridge Zone also shows up prominently as a resistivity high feature. Other zones, such as the Repeater Zone and Area 51 lie generally within a belt of low resistivities with subtle associated highs.

In 2011 and 2012, large soil sampling programs were completed, with a total of 18,999 soil samples collected. Grid lines were run north-south and depending on importance of the area were spaced between 100 to 900 metres apart. Samples were generally collected at 50 metre spacing along the lines, with occasional infill sampling at 25 metres. The original geochemical anomaly defined by AGIP in the 1980s covered about one square kilometre. Colorado's sampling program has expanded this anomalous area over the J.O.-Saddle-Canol Zone to approximately 2.5 kilometres in length, with several of the key indicator elements extending for another 1.5 kilometres to the southeast to join up with the Repeater Zone. The gold and arsenic values have a very strong spatial correlation in this area. A strong trend of thallium, which is considered a key indicator element for Carlin style mineralization in the Yukon and at the Carlin Trend in Nevada, lies to the southwest of the main arsenic-gold anomaly along the Canol Zone trend. The Canol Zone does not contain Cretaceous dyke swarms, but does have a much closer association with the limey sedimentary units and is a very important Carlin gold target area. Silver, antimony, zinc, mercury and bismuth also show anomalous features within this large geochemically significant area.

Additional broad, often multi-element, zones of soil geochemical anomalies were discovered on the Oro Property during the soil sampling programs. These zones include the Golden Hinge, Golden Ridge, North Steel, Blue Steel, Repeater, Limey Ridge, Twin Zones and Area 51.

Results from the soil sampling programs show that in general, gold-arsenic-antimony-mercury values occur together, however arsenic is often more widespread and mercury-antimony is less consistent although can return comparatively high values. Silver and thallium also often occur with gold, but can also be found in zones independent of gold or other indicators. In general, elevated gold in soils is most prominent in the northern half of the claim block, with the exception of Area 51. The strongest cluster of gold occurs in the Oro Main Zone, along with strong anomalies of arsenic, antimony, mercury, bismuth and thallium. Weaker anomalies for silver, zinc and copper also occur in this area.

On a property scale, the geochemistry delineates a northwest-southeast trending conglomerate unit trending across the central portion of the property. This conglomerate unit is bounded on the north by black shales of the Niddery Lake Formation and on the south by the major Hess Fault. A linear, moderately elevated gold geochemical signature can be seen correlating to the conglomerate unit and the fault structure in the Golden Hinge – Golden Ridge areas. Also along this trend, in both the conglomerate and black shale unit, the silver values are very high. There are also scattered elevated arsenic and mercury values related to the conglomerate unit and high antimony, zinc and thallium correlating to the black Niddery Lake Formation shales.

To the north of the Golden Hinge – Golden Ridge Zones is an area of structurally complex geology. Throughout this large area high copper and gold geochemical values, with lesser barium, are prevalent (in zones termed North Steel and Blue Steel).

At Limey Ridge, a strong cohesive gold, arsenic, antimony and mercury geochemical anomaly occurs.

South of Limey Ridge are two parallel high thallium geochemical anomalies, termed the Twin Zone. Coincident with thallium is elevated silver and antimony, with lesser zinc and copper geochemistry.

In Area 51, in the southeast corner of the claim block, a strong antimony-arsenic geochemical anomaly can be seen. Coincident with this anomaly are scattered high gold, zinc and silver values.

339 silt samples were collected from most of the major drainages on the property. Silt sample results showed elevated values for the key Carlin gold indicators but results tend to be less robust than the soil sample values.

Prospecting and rock grab sampling was carried out over much of the property, most notably in areas with significant colour anomalies (gossans). During the course of the prospecting program, rock samples were collected from mineralized, stockworked and altered outcrops. A total of 1507 rock grab samples were collected. Overall rock samples returned disappointing results, with high arsenic and low gold values in many instances.

In 2011, detailed geological mapping was undertaken by Dr. Paul Metcalfe in the Neve-Brick showing area in order to interpret structural controls that may be important for mineralization conduits. In 2012, Dr. Jim Oliver completed semi-regional geological mapping over the Neve-Brick, Limey Ridge, Golden Hinge and western Golden Ridge areas.

Also in 2011 and 2012, a series of 19 trenches totalling 1839 metres were excavated with a Can-Dig type mini-excavator. Trenches were geologically mapped and sampled along 3 metre contiguous intervals for their entire lengths. A total of 626 rock chip and talus samples were collected from the trenches. Some broad zones of elevated gold grades were obtained, such as 446.3 ppb gold over 36 metres from Trench T2011-02, representing the entire trench length. These elevated gold values, combined with the surrounding large, consistent multi-element soil geochemical anomaly suggest that the trench material may lie distal (above?) to a better mineralized, structurally controlled lithological horizon as suggested by Metcalfe (2011).

GEOLOGIC SETTING

Regional Geology

(Extracted from Yukon Geological Survey, Selwyn Basin Metallogeny, compiled by Daniele Heon.)

Tectonic Evolution of Selwyn Basin

Selwyn Basin was the locus of deep-water sedimentation that lay southwest of a major carbonate platform from Late Precambrian to Devonian time (Figure 3). The dominantly thin-bedded siliciclastic rocks grade to the northeast into the thick-bedded carbonate sediments of the variably subsiding Mackenzie Platform. From at least late Silurian to early Devonian, shallow-water clastic, volcanic and carbonate rocks of Cassiar Platform marked the southwestern margin of the basin.

Local episodes of igneous activity occurred throughout the sedimentary sequence. The association of widespread local accumulations of alkaline mafic rocks with Cambrian to Devonian unconformities or disconformities and the local presence of coarse clastics are interpreted to be the result of several short-lived pulses of rifting. Volcanism is interpreted to be the result of extension accompanying thermal subsidence and contraction of the lower crust following thermal uplift due to rifting.

From Cambrian to Silurian time, migration of the shelf edge caused interstratification of basinal and platformal facies, the progradation of basinal rocks into the platform and the formation of a series of satellite sub-basins that occur mostly on the N.W.T. side of Selwyn Basin and deep-water troughs (Richardson and Blackstone troughs) extending into, or enclosed within, the carbonate platform. Dominantly mafic and alkaline volcanic rocks are associated with the sub-Late Cambrian unconformity and also occur in Ordovician, Silurian and Devonian times. Rifting events are inferred in each case. Mid-Devonian rifting and/or wrench faulting resulted in a regional marine transgression that abruptly terminated the Selwyn Basin phase of passive margin sedimentation. Coarse grained clastic and siliceous sediments were deposited across the former shelf edge, locally accompanied by mafic and less abundant felsic volcanism.

Selwyn Basin - Passive Margin Phase

The coarse clastic turbidites of the Upper Precambrian to Lower Cambrian Hyland Group are the oldest exposed rocks of Selwyn Basin. They represent thick accumulations of sediments in submarine fans that were fed from an unidentified, rapidly uplifted source area and deposited in a deepening basin. Marginal uplift and sedimentation are interpreted as manifestations of the onset of a major rifting event. The overlying Lower Cambrian Gull Lake Formation marks off-shelf quiet water setting with some clastic input from the Mackenzie Platform. Local mafic volcanic rocks at the base of the Gull Lake Formation and the possibility of a disconformity at that stratigraphic level suggest a less pronounced rift event in late Early Cambrian time.

The sub-Rabbitkettle or sub-Late Cambrian unconformity is a basin-wide feature thought to result from thermal uplift and erosion caused by a Mid to Late Cambrian rifting event. Subsequent widespread Cambrian mafic volcanism lasted into the Ordovician. The Sedex deposits of the Anvil district occur during this time interval, at the transition between the Mt Mye and Vangorda Formations, which have been respectively correlated to the Gull Lake and Rabbitkettle Formations.

From Late Cambrian-Ordovician to Silurian time, the Road River Group was deposited in euxinic deep-water conditions. The Lower Ordovician to Silurian Duo Lake Formation hosts the large Howards Pass zinc-lead deposit in east-central Selwyn Basin. The Upper Silurian Steel Formation was deposited in a deep but oxygenated environment. Some local tectonic instability is manifested by the sporadic eruption of Cambrian to Ordovician mafic alkaline volcanics and the migration of the shelf edge. The shelf edge was broken by a series of embayments, basins and troughs within which deeper water facies extended from the main part of Selwyn Basin into the platform. Several arches (Mackenzie, Ogilvie) exerted a degree of influence on the distribution of sedimentary facies. To the south, Selwyn Basin was connected to the Kechika Trough of the southern miogeocline (northern BC).

The Misty Creek Embayment formed during Middle Cambrian and younger extension. The Hess River flysch sequence records uplift and erosion of the flanks of the embayment. Deposition of the Rabbitkettle Formation was followed by the eruption of the Middle Ordovician to Middle Devonian volcanic rocks of the Marmot Formation that were deposited along the Duo Lake Formation (Road River Group). The

Meilleur River Embayment was a large semi-circular embayment of Selwyn Basin that extended into the southern Mackenzie Platform from Ordovician to Silurian time. The Prairie Creek Embayment developed in Late Silurian as an eastern satellite depression in the Meilleur River Embayment and was the focus of carbonate sedimentation while deposition of Road River shale continued in the rest of the Meilleur River Embayment. Both the Meilleur River Embayment and the Prairie Creek Embayment were located in the central part of the Liard Depression, a long-lived depocentre that developed in the Ordovician and continued in to Devonian time.

Earn Group - Turbidite Basin Phase

The final and most widespread rifting event in the miogeocline occurred in Devono-Mississippian time. Rifting or wrench faulting along the outer miogeocline caused a dramatic change in pattern of sedimentation. Tectonism may have been associated with a back-arc setting, inboard to a pericratonic Devono-Mississippian arc (Yukon Tanana Terrane) that formed on the western margin of North America; the change in sedimentation is coincident to the age of magmatism on the arc. Widespread Middle to Late Devonian and early Mississippian transgression created a deep marine basin. Shale was deposited across the pre-existing platform-basin transition and well into the Mackenzie Platform to the east. At the same time, to the west, the basin was broken by rift zones that controlled deposition in submarine fan complexes of coarse clastics of the Earn Group. Exhalative barite and sulphides were deposited in this setting, forming significant sed-ex deposits in the Macmillan Pass area, at Clear Lake and in the Kechika Trough.

The deposition of coarse-grained clastic sediments was locally interbedded with volcanic assemblages that include mafic and felsic flows and tuffs. Less abundant felsic volcanism occurred on Cassiar Platform and near the Marg VMS deposit. Shale-hosted nickel sulphide mineralization was also deposited during this time interval, as seen at the Nick occurrence.

Structure

Deformation of Selwyn Basin rocks is dominated by Mesozoic structures. Although less obvious, pre-Mesozoic syn-sedimentary faults are significant as they control the development of secondary sedimentary basins and focus volcanism and Sedex mineralization. Where preserved, these structures can be recognized from contact relationships. In other cases, these older structures may be cryptic, as they are often overprinted by younger structures. Other brittle structures, both pre- and post-Mesozoic, control the NNE to ENE steeply dipping veins and faults.

Mesozoic deformation style is controlled by the incompetent nature of the dominant basinal shaley facies. The rocks deformed internally as a homogeneous mass forming the thrust and fold belt called the Selwyn Fold Belt. The Yukon portion of the Selwyn Fold Belt is bounded to the northeast by the carbonate platform edge and the coincident Mackenzie Fold Belt and to the southwest by the leading edge of accreted terranes and by the dextral transcurrent Tintina fault.

Mesozoic deformation reflects response to largely northeasterly-directed compression. Timing of deformation is constrained: it is younger than the age of the youngest rocks cut by thrust faulting and folding (Jurassic) and is older than the age of non-foliated intrusions that cut the deformed strata as well as thrust faults (mid- and Late Cretaceous). Slight variations in these ages occur throughout the belt with variation in age of intrusive activity and age of deformed strata.

The fold belt is characterized by large-scale thrust faulting, open to tight similar folds, imbricate fault zones, and the development of axial planar slatey cleavage. Competent chert deformed as Chevron folds or isoclinal folds, accommodating significant shortening, with detachment surfaces in less competent strata. In contrast, the thick sequence of competent carbonate rocks of the Mackenzie Platform buckled as large concentric folds and thrust faults, and lacks the slatey cleavage.

Structural trends parallel the arcuate Paleozoic shale-carbonate facies boundary. In some areas complex internal crumpling and faulting may have doubled or tripled stratigraphic thickness without destroying gross stratigraphic integrity.

Faults within Selwyn fold belt have two main orientations: north to northeast trending faults are oblique to the fold trend (<10 kilometres strike length, <400 metres stratigraphic separation), with mostly dip-slope movement; and northwest trending faults are parallel to the trend of folds. Some of these are interpreted as thrusts; most are with dip slip movement. Thrust faults have long strike length, are parallel with fold trends, juxtapose older strata above younger, and cut into stratigraphy along strike.

In western and central Selwyn Fold Belt, strata are folded and imbricated by a series of moderately south-dipping northerly-directed thrust faults. Three principal thrust faults are, from south to north and from older to younger: the Robert Service Thrust, the Tombstone Thrust and the Dawson Thrust. These faults are more than 200 kilometres long and are inferred to root in a single detachment in the Yusezyu Formation of the Hyland Group, with faults cutting progressively deeper in the section from north to south. The intensity of deformation, amount of shortening, and grade of metamorphism all increase from north to south.

The Robert Service Thrust extends from the Dawson map sheet to the northern end of the Mayo map area. In Mayo map area, the Robert Service Thrust sheet gets deformed within the Tombstone Strain Zone.

The Tombstone Thrust parallels the Robert Service Thrust and is characterized by the development of a thick highly strained ductile shear zone in its hanging wall, called the Tombstone Strain Zone ("TSZ") that gradually grades upward into non-strained rocks and juxtaposes progressively older rocks towards the east in both hanging and footwalls, with metamorphic grade increasing toward the east. The thrust probably links into west-northwest striking dextral strike-slip faults of the MacMillan Pass area.

The Tombstone Strain Zone is characterized by prominent foliations and lineations, lenticular compositional layering, shear bands, folding and higher metamorphic grade than rocks outside the zone. TSZ structures and fabrics deform earlier folds and structures resulting in the folding and imbrication of the earlier Robert Service Thrust. Many kinematic indicators suggest top to the northwest displacement, supported by vergence of asymmetrical folds. The TSZ is itself folded by open regional-scale folds.

The Dawson Thrust fault is a linear Mesozoic thrust more than 200 kilometres long that sharply juxtaposes basinal rocks on its south side to shallow water platformal sequence on the north side. It forms the southern boundary of Lower Paleozoic shelf-carbonate sequence and the northern boundary of Selwyn Basin. The Ancestral Dawson fault strongly influenced the emplacement of mafic volcanic and intrusive rocks through much of the Paleozoic, Late Proterozoic and possibly earlier. These rocks are in much greater abundance near the Dawson Thrust fault than in equivalent sequences elsewhere. Even though the Dawson thrust marks a significant and sharp boundary between contrasting sedimentary environments, it is interpreted to represent a moderate amount of shortening, with displacement being no greater than displacement on other thrust faults. Offset across the fault could be as little as two to four kilometres. The Dawson Thrust is interpreted to be an ancient underlying basement structure, which repeatedly influenced patterns of sedimentation, igneous activity and faulting, at least since later Proterozoic time.

In Eastern Selwyn Basin, strike-slip and normal faulting mark the contact with the underlying Proterozoic assemblages. In the Nahanni map area, Devono-Mississippian steep-dipping normal or reverse syn-depositional faults, exhalative barite and Ag-Pb-Zn mineralization suggest an extensional or transtensional regime. Mesozoic deformation is pre Late-Cretaceous and post mid-Triassic. Further north, folding is Early Cretaceous. Some faults are truncated by mid-Cretaceous plutons; others postdate plutonism.

In the MacMillan Pass area, the MacMillan fold belt has a westerly trend and is thought to reflect a deep-seated Devonian fault zone. Folding is tight and a narrow imbricate fault zone of southerly directed east-west trending thrust faults repeats Lower Cambrian to Devonian stratigraphy. South of the imbricate belt, open to closed folds and steep faults are the dominant structures. Some of the steep faults may have been active in the Devonian, forming grabens, and later exerted control on development of the Mesozoic imbricate belt. Northeast from the imbricate belt, structural trend bends northerly to a northwest-southeast orientation. In southwest MacMillan Pass area, the structure is dominated by small to intermediate scale chevron folds in thin-bedded chert of early Paleozoic age. The chert succession has been shortened and thickened but not tilted or imbricated. Displacement was accommodated in the bounding incompetent shale.

Several short-lived pulses of rifting are marked by Cambrian to Devonian unconformities and volcanism. Cretaceous brittle structures control the NNE to ENE steeply dipping veins and faults such as those of the of the Elsa-Keno Hill mining camp silver-lead mineralization. These post-date Tombstone Strain Zone fabrics as well as Cretaceous intrusions but control the emplacement of late dykes.

MacMillan Pass Stratigraphy

Stratiform deposits of the MacMillan Pass district are hosted by carbonaceous and siliciclastic rocks of the Earn Group that overlie the eastern edge of the Selwyn Basin (Figure 4). In the MacMillan Pass area, the Earn Group ranges in age from Early to Latest Devonian. It is locally subdivided into the Portrait Lake Formation and an alkalic basaltic volcanic suite. Locally, the Portrait Lake Formation is principally divided into the basal MacMillan Pass Member, the informal Tom Member or sequence and the Itsi Member. The MacMillan Pass Member is composed of brown weathering westerly derived shale, conglomerate and sandstone turbidites sandwiching a central chert pebble conglomerate unit; the Tom Sequence consists of blue grey weathering, carbonaceous, radiolarian-rich cherty mudstone and chert; and the Itsi member comprises brown weathering, northerly derived, resistant, micaceous quartz sandstone, siltstone and shale of shallow marine origin. The deposits are confined to a small basin outlined by the outcrop pattern of chert-pebble conglomerates of the MacMillan Pass member and a thickened isopach of the Tom sequence.

Devonian volcanic rocks and related intrusions occur mostly at the base of the Earn Group but in the area of the Boundary Creek prospect, are interbedded with the coarse clastics of the MacMillan Pass Member and have been remobilized into fault scarp proximal diamictites. Conodonts from a limestone lens in the volcanic rocks give a Middle Devonian age. Alkalic basaltic volcanism predated and continued up to the time of formation of Zn-Pb deposits and is spatially associated with them, therefore supporting a link between sediment-hosted stratiform deposits and volcanic processes. The volcanic rocks throughout the belt are carbonatized except in the Boundary Creek deposit where complete sideritization is evident.

MacMillan Pass Structure and Tectonic Setting

The host rocks are part of the west-trending MacMillan Fold Belt, which is discordant to the regional northwest structural grain. This fold belt is interpreted to reflect a deep-seated Devonian fault zone that localized facies changes within the Earn Group and also responded differently to Mesozoic deformation. It is divided into three structural blocks based on contrasts in stratigraphy and style of Mesozoic structure: the North, Central and South Blocks.

The ancestral Central block is interpreted as a Devonian graben, a second order basin that was in filled by early coarse clastic turbidites and chert pebble conglomerates, succeeded by thick carbonaceous, cherty and baritic mudstones. The sediments are considerably thicker within the graben and grade laterally into thinner facies on the bounding north and south "horst" blocks. Secondary north-trending syn-depositional faults produced localized pull apart, third order basins where they interacted with the major east-trending, graben bounding faults. The complex syn-depositional faulting resulted in the deposition of boulder diamictite as debris flows were shed off fault scarps; it also localized early Devonian volcanic centres and the subsequent hydrothermal vents that deposited the base metals.

Late Jurassic and Cretaceous deformation produced three phases of folding and faulting; the second phase of deformation was associated with low-angle thrust faults. Broad open folding and normal faulting characterize the Central block while tighter folding and thrusting is evident in the North and South blocks. The structure of mineralized areas is further complicated by early syn-depositional deformation.

Property Geology

Detailed property geology, structure and mineralization summary from 2011 and 2012 mapping by Metcalfe and Oliver can be found in Dandy, 2011 and Dandy and Norris, 2012. New reconnaissance mapping by Oliver in 2013 on the Central Steel area is reported in Appendix II.

Property Mineralization

Oro Main Zone

Geochemical survey results from the 2011 and 2012 exploration programs have significantly expanded an anomalous gold occurrence that was historically defined over a 500 x 800 metre area. This zone, now termed the Oro Main Zone, covers 800 x 4,000 metres of anomalous multi-element soil geochemistry. The northwest strike extension of the Oro Main Zone is masked by glacial overburden. Within this large zone, anomalous soil values range up to 1,490 ppb gold, 19 ppm silver, 4,291 ppm arsenic, 200 ppm antimony and 12 ppm thallium.

The geological understanding of the Oro Main Zone was greatly advanced in 2012 through the work of Dr. Jim Oliver. Two strong structures controlling mineralization have been identified through geological mapping and airborne geophysics and traced for over 10 kilometres.

Throughout the Selwyn trend, Cretaceous aged Tombstone plutonic rocks are responsible for gold occurrences such as at Brewery Bay and Dublin Gulch, where strong gold-arsenic associations occur. These associations are also apparent in the J.O.-Saddle Zones where Cretaceous dykes produce elevations in gold-arsenic and other indicator elements. Of course, these same dykes and nearby fault structures have been interpreted to potentially intersect limey Carlin host units at depth below the J.O.-Saddle-Canol Zones. The gold-arsenic mineralization in this zone may also be interpreted to be an indicator of a buried Carlin deposit.

In soil geochemistry gold and arsenic values show a very strong spatial correlation in this area. Thallium is considered a key indicator element for Carlin style mineralization in the Yukon and at the Carlin Trend in Nevada. A strong trend of thallium values lies to the southwest of the main arsenic-gold anomaly, along the Canol Zone trend. The Canol Zone does not contain Cretaceous dyke swarms, but does have a much closer association with limey sedimentary units and is an important Carlin gold target area.

Golden Ridge – Golden Hinge Zones

The Golden Ridge-Golden Hinge Zones are located approximately 3 kilometres east of the Oro Main Zone and occur within a 2 x 9 kilometre area of elevated silver values in soil geochemistry. Large sections of the Golden Ridge and Golden Hinge Zones grade greater than 5 ppm silver. Localized high gold (>42.7 ppb) and arsenic values (>257.2 ppm) accompany elevated silver values over an area measuring 250 x 1,500 metres. Bounding the silver anomaly to the north is a sub-parallel 600 x 5,000 metre >5 ppm thallium soil geochemical anomaly.

Golden Ridge is probably the most geochemically significant part of this area, with a broad silver signature containing scattered elevated gold values. The silver anomaly trends for 10 kilometres, with an inset gold anomaly extending through the western 6 kilometres. This trend lines up with a strong regional structure, the Hess River thrust fault, and the ankeritic alteration zone within the siliceous chert pebble conglomerate unit. The silver-gold mineralization may represent “leakage” of a buried mineralized body associated with the thrust fault.

Area 51

Area 51 is located approximately 15 kilometres southeast of the Oro Main Zone in the southeastern corner of the Oro Property. It measures 300 x 2,200 metres with high antimony and arsenic values and spotty gold values up to 1,530 ppb gold in soil geochemistry.

Unlike the Oro Main Zone, Area 51 is associated with a Devonian gabbroic dyke which exhibits strong arsenic alteration and pyrite-arsenopyrite mineralization. This dyke intrudes the Carlin favourable limey siltstones of the Sapper Formation. Geological/structural mapping is required in Area 51 in order to determine the significance of this mineralization.

Limey Ridge Zone

The Limey Ridge Zone is located approximately 3.5 kilometres northwest of the Oro Main Zone and occurs in the structural footwall quartzite units to the Caribou Pass Formation limestone. The quartzite is strongly quartz veined with significant iron carbonate alteration and is considered to be very permissive for the development of bulk tonnage gold mineralization. The veined quartzite is coincident with a 300 x 400 metre multi-element geochemical anomaly defined by high gold, arsenic, antimony and mercury values. Within this cohesive anomaly, gold values range up to 1602 ppb.

Twin Zone

The Twin Zone consists of two sub-parallel thallium soil geochemical anomalies which trend to the west from the Oro Main Zone along geologically mapped structural breaks. The northernmost anomaly measures 400 x 3,300 metres in size and the southernmost, 350 x 2,100 metres. The latter is accompanied by a 250 x 1,000 metre silver geochemical anomaly. Both anomalous areas contain core thallium values of over 15 ppm.

Conclusions

In general, gold-arsenic-antimony-mercury values occur together, however arsenic is often more widespread and mercury-antimony is less consistent although can return comparatively high values. Bismuth and thallium often occur with gold, but can also be found in zones independent of gold or other indicators. Strong silver values may relate to gold, thallium or zinc, representing the potential of different mineralization styles. Barium does not relate well in general with other elements but appears to have a spatial relationship to the outboard margins of the conglomerate unit. Copper with scattered gold anomalies in the northeast area of the claim block is an intriguing correlation that requires additional work.

FIELD AND LABORATORY METHODS

Rock and Drill Core Sampling

Rock sampling involves selecting representative grab samples from outcrop, or locally, float. Samples were taken using a rock hammer and then placed in a poly-bag and labelled with the sample number. Sample location sites were marked with fluorescent flagging tape, labelled with the corresponding sample number. Sample descriptions and locations are presented in Appendix IV. Rock sample locations were taken using a hand-held Garmin GPS device.

All drill core was flown directly from the drill site to the camp for processing. All drilled core was sampled at 2 metre intervals, with additional breaks assigned based on changes in lithology, alteration or mineralization. Alternating blanks and certified standard reference materials were inserted every 10 samples, and a duplicate (consisting of ½ drill core, ie equal volume to original sample) was taken every 25 samples. Blank samples consisted of limestone landscaping stone. Standards used for this program were: CDN-CM-25, CDN-GS-5L, CDN-GS-10D, and CDN-GS-P6 all sourced from CDN Resource Laboratories Ltd. QA/QC results have been summarized in Appendix VIII.

Several holes drilled through zones of rock so fractured and soft that efficient core recovery was not possible. Samples within these zones were measured from block to block, however it is important to note that if looking only at the ‘from – to’ depths for a given sample, the true interval length may be misrepresented. For this reason, the ‘Comment’ column in the DH Sample section of the digital core logs has been populated with a measurement of actual core recovered for any sample in which recovery was 40% or lower. Block to block recovery was measured for each hole in entirety; this data is recorded in the Geotechnical section of the core logs and can be referenced if in any doubt about true sample intervals.

All core boxes were photographed prior to cutting. Core samples were cut using gas powered Husqvarna circular diamond saws with 14 inch blades and placed into sequential numbered bags corresponding to triplicate tags stapled into core boxes by logging geologists. Core that was too soft or fractured to be split with a saw was separated into halves within the box using a stiff flat bladed spatula, then one half placed into sample bag.

Samples were transported to ALS Minerals in Whitehorse either by road, via Mercer Contracting, or air freight via Alkan Air. Samples transported by air were picked up from Alkan Air by representatives from ALS Whitehorse.

SAMPLE PREPARATION, ANALYSIS, AND SECURITY

Sample Preparation and Analysis

Rock and drill core samples were prepared (crushed, pulverized and split) at the ALS preparation facility in Whitehorse, Yukon, and after preparation, a pulp split was shipped through the ALS Minerals chain of custody protocol to the ALS Minerals laboratory located in North Vancouver for digestion and analysis.

The lab methods used were as follows:

Element	**Lab Method**	**Description**	**Comment**
Preparation	Prep 31	Crush to 70% passing 2mm, riffle split off 250g, pulverize split to better than 85% passing 75 microns	Standard prep method
Au	Au-ICP22	50g Fire assay with ICP-AES finish	Larger charge weight to maximize chances of Au particles being in the crucible
Au (ore grade method)	Au-GRA22	50g fire assay with gravimetric finish	The gravimetric method was only used on the higher grade standards. No regular core sample received this assay method which was set to be triggered at 3 g/t

PGE's and Au	PGM-ICP24	50g Fire Assay with ICP-AES finish	Pd and Pt only done for the samples from hole ORO13-01. Au method comparable to Au-ICP22.
Multi-element	ME-ICP61	4 Acid ICP-AES, 33 elements	Every sample

Sample Security

Prior to shipment, rock and drill core samples were stored at the Colorado camp on the North Canol Highway. On a weekly basis, samples were placed in sealed and labeled rice bags, and were then transported by Alkan Air or Mercer Contracting Ltd. to Whitehorse where they were delivered to the ALS Canada Ltd.'s preparation facility in Whitehorse, Yukon. At all times the samples were under complete control of Gold Field's employees or contactors or ALS laboratory staff. The assay laboratory catalogues all samples and assures a complete chain of custody of each sample through the analytical process.

The retained portion of the drill core in labelled core boxes is stored in a flat stacked manner adjacent to Colorado's camp along the North Canol Highway.

2013 EXPLORATION PROGRAM

The 2013 exploration program on the Oro Property consisted of rock sampling/prospecting and diamond drilling. Work was conducted by a 12 person crew working out of Colorado Resources Ltd.'s camp along the North Canol Highway. Daily access to the property was via helicopter, provided by Silver King Helicopters. The exploration program was operated by Gold Fields under supervision of Rob Campbell, P.Geo., Tim Stubley and Linda Dandy, P.Geo.

Rock Sampling

In 2013, during the course of drill target definition and prospecting, 92 rock samples were collected. Figures 7A to 7C show the rock sample numbers and locations. Appendix III is a full listing of all rock sample locations (UTM coordinates) and descriptions. ALS Certificates of Analyses for rock samples can be found in Appendix IV.

Rock sample assay results were generally disappointing with only one sample returning gold values of greater than 1 g/t.

DIAMOND DRILLING

In 2013, a total of 2614.36 metres was diamond drilled in 13 holes on the Oro Property. Diamond drilling services were provided by Radius Drilling Ltd. Prior to drilling, Gold Fields undertook a geochemical analysis of the 2011-2012 soil sampling data in order to generate targets in zones of anomalous gold and Carlin-type pathfinder elements. These zones were examined in detail and correlated where possible to trends in airborne geophysics (2011 Dighem Survey) and regional scale geological maps. Prior to drilling and throughout the program, local scale geological mapping was carried out in order to refine and prioritize drill targets.

Drilling on the Oro Property was successful despite difficult drilling conditions. Throughout much of the area of drilling, rock is friable, with complex structures cut by both major and minor faults. Geologic units of higher competency are commonly intercalated with friable shale beds (quartzite, chert, limestone), or are strongly silicic (chert pebble conglomerate) and highly abrasive to equipment. Lost water return was a common occurrence.

In all holes, HW casing was installed to bedrock, followed by drilling of HQ core through the strongly weathered, blocky, near-surface bedrock and reduced to NQ core once conditions stabilized (generally around 100 metres depth).

Two holes were abandoned: ORO13-02 and ORO13-05. ORO13-02 did not intersect bedrock; this hole was steepened by 25 degrees and re-drilled as hole ORO13-03. ORO13-05 did intersect bedrock but high torque on the drill string caused squeezing of the hole and it was shut down early. This target was later re-drilled from a nearby pad as ORO13-07.

Of the 11 holes completed, 5 were located in the Oro Main Zone (ORO13-01, 03, 06, 07, 08), but outside of the central area previously drilled by AGIP. These holes were designed to test favourable structures and fault contacted limestone units.

A single hole (ORO13-04) was put in at Limey Ridge where strong mercury-antimony geochemistry within a broader gold-arsenic zone coincides with faulted limestone-shale-quartzite units. Detailed targeting within this area disproved the presence of large scale folding as shown by regional mapping and instead determined the presence of faulting with several hundred metres of offset.

Two holes were drilled in the Golden Hinge area. One hole (ORO13-09) targeted high gold soil and rock samples related to siliceous, frothy quartzite interbeds within shales. The second hole (ORO13-11) was drilled to form a fence in front of the initial hole and crossed the regional scale Hess Fault and the contact with the large conglomerate unit to the north.

One hole was drilled in the Golden Ridge area (ORO13-12). This hole was not located in the best location due to the steepness of terrain and poor weather conditions late in the season. The target for this hole was to drill past the contact of silica-facies conglomerate and through the carbonate-facies conglomerate into its hanging-wall contact with a large felsic dyke. Due to budget constraints this hole was stopped short of intersecting the felsic dyke unit.

A single hole was drilled in the Blue Steel area (ORO13-10) in a structurally complex area of interbedded limestones, cherts and shales within a gold soil geochemical anomaly.

One hole was put in at Area 51 (ORO13-13) to test the strong arsenic-gold-antimony soil geochemistry associated with a Devonian gabbroic unit and quartz veining. Although the drill hole was set up immediately adjacent to the outcropping gabbro, it was not intersected in the drill hole.

Drill hole locations can be seen on Figures 4, 5, 6 and 8. Collar coordinates are listed in Table II. Diamond drill logs, sample spreadsheet and assay certificates can be found in Appendices V, VI and VII, respectively.

TABLE II
DIAMOND DRILL HOLE COLLAR INFORMATION

HOLE ID	UTM E	UTM N	ELEV (m)	AZIMUTH (°)	DIP (°)	LENGTH (m)
ORO13-01	400946	7019740	1410	020	-50	191.41
ORO13-02	401456	7020191	1550	045	-50	34.44
ORO13-03	401456	7020191	1550	045	-75	267.00
ORO13-04	396906	7022328	1760	320	-50	228.60
ORO13-05	400850	7020585	1250	030	-50	40.64
ORO13-06	400655	7020122	1350	040	-60	359.97
ORO13-07	400880	7020635	1250	030	-60	272.49
ORO13-08	401963	7019452	1645	200	-65	260.30
ORO13-09	404443	7020625	1390	060	-55	175.26
ORO13-10	406500	7022492	1668	180	-55	185.32
ORO13-11	404570	7020795	1340	030	-50	258.47
ORO13-12	405287	7020296	1410	045	-50	227.99
ORO13-13	414545	7012678	1555	155	-60	112.47

A total of 1,535 samples were taken from holes ORO13-01 through ORO13-13. A summary of results from the diamond drilling program shows that of the 11 completed holes on the property, 7 intersected zones of greater than 2 metres thick containing greater than 0.1 g/t gold. These intersections are summarized in Table III.

TABLE III
DIAMOND DRILL HOLE SUMMARY OF RESULTS

HOLE ID	LOCATION	FROM (m)	TO (m)	WIDTH (m)	GOLD (g/t)
ORO13-03	Main Zone North	89.0	93.0	4.0	0.208
ORO13-04	Limey Ridge	141.0	145.0	4.0	0.166
		161.0	165.0	4.0	0.214
		169.0	186.0	17.0	0.167
ORO13-06	Main Zone West	277.0	308.0	31.0	0.251
ORO13-07	Main Zone West	36.0	44.0	8.0	0.191
		58.91	68.28	9.37	0.182
		73.25	91.9	18.65	0.186

HOLE ID	LOCATION	FROM (m)	TO (m)	WIDTH (m)	GOLD (g/t)
ORO13-08	Main Zone Southeast	99.0	103.02	4.02	0.139
ORO13-09	Golden Hinge	13.7	17.0	3.3	0.295
		34.87	43.0	8.13	0.155
		139.59	145.69	6.1	0.326

Drill Hole Summaries

ORO13-01

Target: ORO13-01 tests a gold geochemical anomaly that is located south of the Canol Fault. This hole was collared to intersect permissive decarbonatized limestone (Sapper Formation) in contact with siliceous shales, siltstones and argillites. Hole also drills through magnetic and resistivity gradients.

Location: ORO 13-01 is situated ~500 metres southwest of AGIP's historic hole B-5-85 in the Oro Main Zone.

Lithology: Overburden to 7.2 metres, followed by strongly weathered shale to 16.26 metres, at which point shale becomes more competent and bioturbation textures become evident to 26.5 metres. Bioturbated shale overlies (faulted contact 26.50 – 29.87 metres) massive to bedded limestone and minor calcareous shale to 68.23 metres. An ~4 metre zone of carbonate+quartz veins characterizes the conformable contact between limestone and underlying planar-laminated to massive black calcareous shale that extends to EOH at 191.41 metres.

Alteration: Fracture controlled Fe oxide (limonite/goethite or similar) alteration is common on shear planes and within fault zones to 29.87 metres. Disseminated and vein envelope Fe carbonate alteration occurs within limestone and shale beds proximal to limestone.

Mineralization: Pyrite occurs as vuggy nodules in bioturbated shales from 16.25 to 19.2 metres**.** From 29.87 metres, limestone contains abundant (~5%) disseminated and local network vein hosted pyrite. Pyrite stringers are sheeted roughly parallel to a cleavage that offsets earlier carbonate veins to 57.37 metres. Fine grained bedding parallel (possibly primary) dissemination of pyrite extends to 64.2 metres. From 64.2 metres pyrite abundance decreases; occurring as lenticular nodules elongate to bedding, fine-grained bedding parallel layers, and very rare <20 centimetre beds of massive pyrite+carbonate.

Significant Intersections: No significant assay intervals.

Interpretation/Comments: Primary sulphides appear to occur throughout ORO13-01, but pyrite veins intersected in limestone represent a possible secondary mobilization. ORO13-01 was designed to collar in limestone, but bioturbated shale occurs at top of bedrock. This shifts the surface contact significantly to the north, and suggests that mapped contacts may reflect downslope slump of talus. Bedding angles appear to be consistent with those mapped.

ORO13-02

Target: ORO13-02 targeted the potential intersection of three structural zones identified by surface mapping, historic drilling and geophysical surveys. In addition, this hole also tested the potential intersection with a narrow permissive limestone unit identified in surface mapping, and is located proximal to a strong geochemical anomaly.

Location: ORO13-02 is situated on the same drill from which AGIP holes B88-11 and B88-12 were drilled and is located approximately 100 metres northeast of the center of the Main Zone.

Interpretation/Comments: Hole was lost in overburden at 34 metres.

<u>ORO13-03</u>
Target: Located on the same pad as ORO13-02, ORO13-03 targets the potential intersection of three structural zones identified by surface mapping, historic drilling and geophysical surveys. In addition, this hole will also test the potential intersection with a permissive limestone unit identified in surface mapping, and is located proximal to a strong geochemical anomaly.

Location: ORO13-03 is situated on the same drill from which AGIP holes B88-11 and B88-12 were drilled and is located approximately 100 metres northeast of the center of the Main Zone.

Lithology: 10.36 metres of overburden overlies highly weathered and decomposed undifferentiated shale and weakly weathered shale-argillite-siltstone to a depth of 34.00 metres. From 34.00 to the end of the hole at 267.00 metres, variably silicified shale with laminations and very thin bedding with metre scale interbeds of chert displaying abundant quartz-carbonate veining and structurally controlled (or utilized) contacts was intersected; with the exception of a significant fault zone from 91.24 to 96.20 metres.

Alteration: The dominant alteration observed in ORO13-03 was comprised of clay and minor FeOx-limonite/goethite with trace talc and graphite on fracture surfaces and along cleavage traces.

Mineralization: Arsenopyrite was observed from 85.39-91.24 metres within semi-massive pyrite-arsenopyrite veins displaying diffuse margins. Pyrite was observed throughout the hole, as fine-grained disseminations, very thin beds, lenses and elongate nodules that parallel bedding, as well as rare larger nodules which cross-cut bedding. The relationship (or lack thereof) between the massive, aggregated fine-grained disseminated pyrite within the cherty interbeds and the high density quartz-carbonate (potentially trace FeCarb) veins remains enigmatic.

Significant Intersections: 89 to 93 metres = 4 metres of 0.208 g/t gold.

Interpretation/Comments: ORO13-03 successfully intercepted a significant fault zone at depth with proximal arsenopyrite-pyrite mineralization. No permissive limestone lithology was intersected. Primary pyrite was observed throughout the hole, but pyrite veinlets and discrete textures observed in the cherty interbeds represent a possible secondary remobilization.

<u>ORO13-04</u>
Target: Tests the eastern portion of a geochemical target defined by high gold in soils plus multiple trace element (arsenic, antimony, mercury) associations. Anomalous high gold values were also found in quartzite rock samples in this area. The hole was designed to intersect the quartzite/limestone contact in a possible structural dilation zone.

Location: Eastern flank of the Limey Ridge summit.

Lithology: Overburden to 5.18 metres**.** ORO13-04 cuts through a thickly interbedded succession of thinly laminated to massive shales and thinly bedded to massive limestone. Graded fining downwards beds ± rip-up clasts occur consistently throughout the succession to a strongly faulted (112 metres), contact against massive to locally graded medium grained quartzite and minor shale interbeds that extends to EOH at 228.6 metres.

Alteration: Fracture controlled FeOx coats surfaces and pervades shears (±clay) throughout the limestone and shale from 5.18 – 116.8 metres. An increase in pervasive and dissolution fracture controlled FeOx alteration occurs in massive vuggy quartzites from 116.8 – 191.9 metres. From 191.9 metres, possibly associated with sheared interbeds of shale, scorodite/orpiment and realgar±hematite occur on fractures, along cleavage in shales, and locally as pervasive patchy discolouration of wall rock adjacent to fractures/dissolution surfaces.

Mineralization: Pyrite occurs as thin bands, nodules and fine disseminations in black shale and rarely as dissemination in quartzite.

Significant Intersections: 141 – 145 metres = 4 metres of 0.166 g/t gold. 161 – 165 metres = 4 metres of 0.214 g/t gold. 169 – 186 metres = 17 metres of 0.167 g/t gold.

Interpretation/Comments: Graded bedding, local cross beds, rip up clasts and load structures indicate that younging is down-hole (to north) in steeply south dipping to vertical beds. Dissolution texture and presence of realgar/orpiment in strongly altered quartzite are good signs for a possible gold host, and may explain the anomaly at surface.

ORO13-05

Target: ORO13-05 is located approximately 500 metres northwest of AGIP's hole B88-17 within the Oro Main Zone. ORO13-05 targets the intersection of the Caribou Pass Limestone and the Main Oro Fault zone, which was determined via surface mapping and analysis of generated cross-sections. ORO13-05 also tests a high grade soil geochemistry target.

Location: 500 metres **n**orthwest of Main zone.

Lithology: Variably graphitic shale throughout with discrete major fault zones.

Alteration: Variable weak to strong clay alteration associated with major fault zone.

Mineralization: Trace to locally minor fine-grained disseminated pyrite.

Significant Intersections: No significant assay intervals.

Interpretation/Comments: Hole not drilled to sufficient depth to test targets; pad was moved approximately 60 metres at 030^{o} from ORO13-05 and steepened to -60° TCA to avoid similar issues, renamed to ORO13-07.

ORO13-06

Target: ORO13-06 targets a soil geochemistry anomaly with elevated gold, arsenic, mercury and antimony. This hole was designed to intersect the Canol Deformation Zone at depth, in addition to two quartz-plagioclase-phyric felsic dykes which display discrete sulphide mineralization in surface mapping.

Location: ORO13-06 is located approximately 500 metres to the southwest of the main zone and 500 metres northwest of ORO13-01.

Lithology: 16.49 metres of overburden overlies highly weathered black carbonaceous shale intersected to a depth of 113.69 metres, variably siliceous shale and graphitic shale with laminated beds and breccias of sandstone/quartzite were intersected to the end of hole at 359.97 metres. These shales are intruded by several discrete quartz-plagioclase-phyric dykes up to 15 metres in thickness. Several robust fault zones were intersected, in addition to nearly ubiquitous strong fracture networks below 124.66 metres depth.

Alteration: Fracture controlled limonite/goethite-FeOx alteration was observed in the top of the hole and within the upper quartz-plagioclase-phyric dykes; graphite, trace talc and an unidentified green mineral (scorodite?) was observed dominating fracture surfaces at depth. Pyrite and arsenopyrite replaces mafics in the felsic dykes.

Mineralization: Pyrite was ubiquitous throughout the hole; as laminations, nodules, lenses and disseminations in the shales and as fine grained disseminations and replacing mafics. Pyrite also occurs in trace stringer veins and as fine-grained aggregates in discrete quartz veins and vein breccias. Arsenopyrite was observed from 280.90 to 305.75 metres with pyrite, replacing mafics in a felsic dyke.

Significant Intersections: 277 – 308 metres = 31 metres at 0.251 g/t gold.

Interpretation/Comments: This hole successfully intersected the targeted quartz-plagioclase-phyric felsic dykes at depth, in addition to intersecting a significant structural zone. This hole also observed arsenopyrite and potentially arsenate mineralization which could be related to the surface geochemical anomaly. There is also evidence for secondary pyrite in quartz veins and pyrite stringers.

ORO13-07

Target: ORO13-07 targeted the intersection of the Caribou Pass Limestone and the Main Oro Fault zone, which was determined via surface mapping and analysis of generated cross-sections. ORO13-07 also tested a high grade gold soil geochemistry target.

Location: ORO13-07 is located approximately 60 metres along a 030° trend from ORO13-05, 500 metres northwest of AGIP's hole B88-17 within the Oro Main Zone.

Lithology: 25.91 metres of overburden overlies interbedded laminated shales with massive to thinly bedded quartzites and rare thinly bedded limestones to a depth of 246.96 metres. From 246.96 metres to the end of hole at 272.49 metres, limestone beds up to 7 metres thick were interbedded with shale and rare quartzite. Several major fault zones and fault gouge zones were intersected from 58.91-65.16 metres, 73.50-81.68 metres, 89.00-93.72 metres, and 241.24-246.96 metres.

Alteration: The shale exhibits weak fracture controlled clay alteration, and trace graphite and talc on rare fracture surfaces. The quartzite displays weak silica flooding and variable fracture controlled carbonate alteration.

Mineralization: Pyrite was seen ubiquitously throughout the hole with the exception of discrete barren fault zones. Pyrite was observed as nodules, lenses, beds and fine-grained disseminations within the shale, as fine-grained disseminations within the quartzite and limestone. In addition, the limestone had rare fracture controlled pyrite. Local massive pyrite was intersected from 72.35-73.50 metres.

Significant Intersections: 36 – 44 metres = 8 metres of 0.191 g/t gold. 58.91 – 68.28 metres = 9.37 metres of 0.182 g/t gold. 73.25 – 91 metres = 18.65 metres of 0.186 g/t gold.

Interpretation/Comments: This hole successfully intersected limestone (which contained fine-grained disseminated pyrite) near the end of the hole. The target was to intersect the limestone unit immediately adjacent to a major fault zone. Although there was abundant faulting throughout the hole, the main fault appears to be located well away from the limestone unit and it is doubtful that this hole intersected its intended target.

<u>ORO13-08</u>
Target: ORO13-08 targeted permissive lithologies; variably decalcified limestone of the Sapper Formation and the potential contact with silver grey shale/argillite and cherty/siliceous argillites which are intruded by a quartz-feldspar-phyric dyke.

Location: Located approximately 1 kilometre southeast of the Main zone and 1 kilometre east of ORO13-01.

Lithology: Overburden extends to 4.57 metres, followed by sulphide-bearing graphitic black shale to 71.83 metres. This unit is cut by a quartz and feldspar–phyric dyke between 37.85 and 45.11 metres. Thinly bedded calcareous shale occurs between 71.83 and 74.67 metres, followed by graphitic shale to 101.5 metres. A 2 metre fault zone marks the upper contact of thinly bedded to massive calcareous mudstone/shale that extends to EOH at 260.3 metres.

Alteration: Strong fracture controlled FeOx alteration occurs from top of hole to ~22 metres and may be associated with minor scorodite. Clay alteration occurs in fracture/fault zones, and is pervasive throughout the felsic dyke logged between 37.85 and 45.11 metres.

Mineralization: Pyrite is weakly disseminated throughout the graphitic shale, and is most abundant between 19.51 and 35.30 metres, where it occurs in lenses up to 3 centimetres thick.

Significant Intersections: 99 – 103.02 metres = 4.02 metres of 0.139 g/t gold.

Interpretation/Comments: The hole targeted 'Sapper Limestone', which assumes a buff weathered appearance at surface, occurs as thinly bedded or laminated to massive black calcareous mudstone at depth. Significant gold mineralization was not intersected in this hole.

<u>ORO13-09</u>
Target: ORO13-09 targeted a specific soil sample site which returned 830 ppb gold within an elevated gold in soil polygon with additional indicator elements (arsenic, mercury, antimony). It also targeted elevated rock samples with anomalously high gold values in surface rock samples (~1.5 g/t) from 2012 trenching and grab samples. In addition, ORO13-09 potentially targeted the interpreted intersection of the geochemically anomalous Caribou Pass Chert pebble conglomerate at depth.

Location: ORO13-09 is located approximately 3.5 kilometres east of the Main Zone in the Golden Hinge area.

Lithology: Overburden to 7.61 metres. Sulphitic black shale extends to a fault between 10.15 and 17 metres followed by sulphitic black shale with local 'beds' of massive pyrite to 34.87 metres. A zone of partially quartz vein - healed fault brecciated shale extends to 41.14 metres followed by sulphitic black shale with local massive pyrite 'beds' to 56.39 metres. Between 56.39 and 63.28 metres, another zone of partially healed fault breccia occurs, followed by sulphitic black shale with quartzite interbeds to 152.1 metres. Siliceous, pyrite bearing black shale with minor thin folded and sheared quartzite beds extends from 152.1 metres to EOH at 175.26 metres.

Alteration: Weak clay alteration exists within fracture planes. Massive pyrite zones appear to have secondary pyrite growth or recrystallization, and are shot with quartz+ankerite veins. Vein envelopes to locally pervasive silica alteration may occur proximal to these zones. Locally, some of the quartzite below the fault ending at 63.28 metres appears to have been 'flooded' by pyrite proximal to shale contacts.

Mineralization: Pyrite occurs in several forms: within shale units it may be finely disseminated or aligned on wispy horizons. Circular to amorphous nodules, massive bands and local rare veinlets also occur in shale. Massive pyrite zones appear to have several generations of growth, including very fine-grained (almost aphanitic) pyrite, coarse-grained fuzzy edged euhedral to framboidal pyrite, and local stringer vein-like overprint. Abundant disseminated pyrite occurs within quartzite locally.

Significant Intersections: 13.7 - 17 metres = 3.3 metres of 0.295 g/t gold. 34.87 - 43 metres = 8.13 metres of 0.155 g/t gold. 139.59 – 145.69 metres = 6.1 metres of 0.326 g/t gold.

Interpretation/Comments: Intersected fault zones and common multiple folded interbeds indicate a high strain zone. The most visible deformation occurs in more brittle beds of quartzite. Apparent pyrite partial flooding of quartzite beds below 63.28 metres may indicate a quartzite protolith for the massive pyrite 'beds' in the higher strain zone up hole. The hole did not continue to adequate depth to intersect the conglomerate contact.

<u>ORO13-10</u>

Target: This hole was targeted to test a high grade gold geochemical anomaly. It specifically targeted the highest gold in soil sample in this area (230 ppb). The hole also targeted a geologic package of calcareous siltstone and shale with limestone interbeds, and shale with thin limestone beds and barite.

Location: ORO13-10 is located at the Blue Steel area, ~2.4 kilometres northeast of ORO13-09.

Lithology: Overburden to 7.32 metres followed by bioturbated, massive to thinly bedded chert to 74.07 metres (interval of no core 54.86 – 57.93 metres). Faulted chert and shale overlie a thickly bedded limestone unit between 84.12 and 87.28 metres. Fault brecciated siltstone extends to 91 metres, followed by massive to laminated siltstone, argillite and shale to 110.5 metres, and a fault gouge zone to 117.04 metres. Black shale with local chert interbeds extend to 138 metres, followed by silty chert and siliceous shale to EOH at 183.53 metres.

Alteration: Rusty red and yellow FeCarb and FeOx stains fracture surfaces in all units, and permeates downwards into the limestone from its faulted upper contact. Strong clay alteration is present in fault zones.

Mineralization: The upper chert beds and limestone are unmineralized; traces of disseminated and nodular pyrite begin to occur in the shale between 91 and 138 metres. The siliceous shale below 138 metres contains local framboidal pyrite aggregates and thin discrete pyrite bedding horizons.

Significant Intersections: No significant assay intervals.

Interpretation/Comments: The targeted limestone is thinner than expected, and shale not particularly calcareous. Framboidal pyrite growth in siliceous shales below 138 metres may reflect a secondary pyrite phase.

<u>ORO13-11</u>
Target: Continues section started with ORO13-09 in broad zone of anomalously high soil geochemistry. Designed to intersect the Hess Fault zone and drill through the core of a syncline (interpreted from local scale mapping) in silica - facies chert pebble conglomerate.

Location: ORO13-11 is located approximately 200 metres north-northeast of ORO13-09.

Lithology: Overburden to 10.01 metres, followed by shale, argillite and siltstone to 12.35 metres. Between 12.35 and 31.39 metres are faulted siltstone, quartz-cemented breccia, gouge, and quartz-flooded conglomerate in which grain boundaries appear stylolitic or sutured comprising a zone of higher strain. From 31.39 metres graphitic shale extends to 107.23 metres but is cut by two felsic dykes: the first (55.78 – 57.2 metres) is fine-grained, equigranular with an emerald green alteration mineral replacing phenocrysts; the second (79.25 – 81.23 metres) is unaltered. Black graphitic shale with extensive faulting extends to 131.12 metres, followed by clay and pyrite altered felsic dyke to 132.12 metres, and shale to 143.0 metres. From 143.0 metres to EOH at 258.47 metres, drilling intersects an upwards-fining sequence that repetitively grades from pebble conglomerate to granular sandstone to siltstone to shale.

Alteration: FeOx alteration is strong along fracture surfaces in all units. Cross cutting dykes are moderately replaced by clay, though some primary textures can be seen. Moderate silica alteration may be associated with sheeted quartz veins that are common in the siliciclastic units. Secondary pyrite may be present locally.

Mineralization: Within the conglomerate to siltstone sequences primary and secondary pyrite are difficult to distinguish. In the conglomerates, massive pyrite occurs as clasts, aggregate pyrite locally forms rims around clasts or cores within them. Within siliceous siltstone horizons, rare dendritic pyrite crystals occur, and pyrite locally forms thin discontinuous veins that cross cut bedding.

Significant Intersections: No significant assay intervals.

Interpretation/Comments: Possible secondary pyrite mineralization within siltstone units is encouraging. This hole targeted a syncline interpreted from mapping, however no evidence of that structure was observed in drill core. Younging indicators and bedding measurements are consistent with moderately west dipping upward facing succession. If the syncline exists, it is possible that the western limb has been sheared off in the faulting that occurs between 17.68 and 31.39 metres.

ORO13-12

Target: Golden Ridge: Designed to intersect silica-facies and carbonate-facies chert pebble conglomerates and a felsic dyke. Targets FeCarb alteration mapped on surface, and drills towards an anomalous high gold soil geochemical anomaly. Designed as a lower-elevation, late season alternative to proposed pad ORO13-X, which was set up to drill the same section but within the high gold soil zone.

Location: ORO13-12 drills into a steep south facing ridge slope ~ 900 metres southeast of ORO13-11.

Lithology: Overburden to 7.01 metres. ORO13-12 intersects an upward fining polymictic chert, mudstone and pyrite pebble conglomerate sequence ranging from massive matrix supported conglomerate beds through graded pebble to granular sandstone beds, and laminated to massive siltstone. Between 84 and 122 metres, patchy Fe carbonate flooding occurs within the matrix, possibly marking a transition to the 'carbonate facies' conglomerate. Fe-carbonate fills all interstitial space between grains from 122 – 127.03 metres, but becomes weak and patchy to 167.03 metres, only occurring in and around faults. From 167.03 metres to EOH at 227.99 metres, silica facies carbonate is dominant, with only rare patchy carbonate in the matrix.

Alteration: Fe-carbonate alteration occurs dominantly as veins within fault zones, and patchy pervasive cement proximal to faults. Fe-carbonate alteration is most common between 84 and 127.05 metres.

Mineralization: Pyrite occurs throughout ORO13-12, most typically as clasts of massive pyrite, or mudstone containing up to 80% disseminated pyrite. Locally, pyrite appears to be remobilized out of clasts, as aggregates appear in the matrix adjacent to thin veinlets within cracked pyrite clasts.

Significant Intersections: No significant assay intervals.

Interpretation/Comments: The carbonate facies chert pebble conglomerate observed in ORO13-12 appears to be a patchy infill texture, most common within and proximal to faults. The degree of Fe-carbonate and FeOx alteration is very weak compared to the rusty red weathered carbonate facies conglomerate mapped on surface, and does not appear to be of economic significance, however due to late season weather and safety concerns ORO13-12 was situated in a sub-optimal position with relation to the high gold soil anomaly. Also, due to budget constraints this hole was stopped short of intersecting the contact with the mapped felsic dyke unit. The original target (proposed pad ORO13-X) is still considered a viable option.

ORO13-13

Target: ORO13-13 targets quartz±FeCarb veins in a gabbroic intrusive, in a zone of anomalously high soil geochemistry.

Location: ORO13-13 is situated in the south east portion of the claim group in target area 'Area 51', and is approximately 15 kilometres southeast of the 'Main Zone'.

Lithology: Overburden to 6.1 metres, followed by calcareous mudstone and shale to 8.53 metres. Massive micritic limestone extends from 8.53 to 23.77 metres, followed by a zone of limestone and shale rubble to 26.67 metres. The drill core from 26.67 to 29.92 metres is dominated by fault gouge and calcareous shale rubble. A short zone of competent micritic limestone extends to 30.7 metres, followed by a fault gouge and rubble zone that extends to 43 metres. Laminated calcareous shale and mudstone extends to 80.51 metres. From 80.51 metres to EOH at 112.47 metres, micritic limestone interbeds <6 metres thick, occur within laminated calcareous shale.

Mineralization: Trace disseminated pyrite occurs to 43 metres, increasing to ~2% within local zones (<4 metres) containing up to 10% disseminated pyrite to EOH. Vein-hosted pyrite up to ~10 % occurs within carbonate breccia cement between 105.72 and 108.5 metres.

Significant Intersections: No significant assay intervals.

Interpretation/Comments: Anticipated gabbroic unit identified in surface mapping was not intersected.

Discussion of Results

Although zones with elevated gold values and Carlin type indicator elements were intersected in several drill holes, no economically significant gold intervals were obtained. As can be seen in Figure 8, diamond drilling tested only a small portion of the broad, multi-element geochemical anomalies with their associated geophysical signatures.

CONCLUSIONS

On the Oro Property strong gold and associated indicator element geochemistry, combined favourable geology and structures show the robust potential of the underlying mineralizing system.

Prominent geochemical anomalies are associated with the Oro Main Zone, Limey Ridge, Golden Hinge, Golden Ridge, Repeater, North Steel, Blue Steel and Area 51. Of the 11 diamond drill holes completed in 2013, 5 tested the margins of the Oro Main Zone, 1 tested Limey Ridge, 2 tested Golden Hinge, 1 tested Golden Ridge, 1 tested Blue Steel and 1 tested Area 51.

The multi-element soil geochemical anomalies which make a significant contribution to drill hole targeting are very broad with anomalies in areas such as Golden Hinge being up to 10 kilometres in length. Testing such targets with a few or a single drill hole is generally not sufficient.

Regional and reconnaissance geological mapping combined with geophysical interpretations show strong structural controls to the geological sequences. These structures are also often intimately related to the strongest portion of the geochemical signatures. Target scale detailed geological and structural mapping is required in areas of strong geochemistry in order to better define drill hole locations prior to additional diamond drilling programs.

RECOMMENDATIONS

Due to the large size and to the strength of the multi-element soil geochemical anomalies on the Oro Property, additional exploration work is recommended. The initial exploration phase will concentrate on target delineation. In order to locate future drill holes in the best possible positions, detailed local geological mapping concentrating on structural interpretations is imperative to be carried out over the strongest geochemically anomalous areas.

A second phase consisting of 2500 metres of diamond drilling in 10 holes should be completed over the best geologically interpreted target zones as defined by Phase I.

Estimated cost for Phase I of the exploration program is $500,000 and Phase II is $1.5 million.

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COST STATEMENTS

The Oro Property quartz claims have been arranged into 2 claim groups. The cost statement is broken down to reflect the work filings on each of the 2 individual groupings. This report covers all the work completed on the property in 2013.

West Group

GEOLOGISTS:	40 days @ $750	$ 30,000
CORE CUTTERS:	40 days @ $500	20,000
MANAGEMENT:	20 days @ $850	17,000
ANALYSES:	830 ROCK/CORE SAMPLES @ $45	37,350
HELICOPTER:	153.2 HOURS @ $2500	383,000
DRILLING: 1654.85 METRES @ $234/M		387,323
	MISCELLANEOUS (MOB, CORE BOXES, MUD ETC) @ $75/M	124,114
FOOD AND ACCOMMODATION: 240 mandays @ $350		84,000
SUPPLIES, FREIGHT, TRAVEL AND MISCELLANEOUS:		25,000
REPORT PREPARATION:		5,000
TOTAL COSTS:		**$ 1,112,787**

East Group

GEOLOGISTS:	24 days @ $750	$ 18,000
CORE CUTTERS:	24 days @ $500	12,000
MANAGEMENT:	12 days @ $850	10,200
ANALYSES:	490 ROCK/CORE SAMPLES @ $45	22,050
HELICOPTER:	88 HOURS @ $2500	220,000
DRILLING: 959.51 METRES @ $234/M		224,525
	MISCELLANEOUS (MOB, CORE BOXES, MUD, ETC) @ $75/M	71,963
FOOD AND ACCOMMODATION: 161 mandays @ $350		56,350
SUPPLIES, FREIGHT, TRAVEL AND MISCELLANEOUS:		13,176
REPORT PREPARATION:		6,950
TOTAL COSTS:		**$655,214**

QUALIFICATIONS

I, Linda Dandy, hereby certify that:

1. I am a Consulting Geologist having an office at 4900 Warm Bay Road, Atlin, British Columbia, V0W 1A0.

2. I am a graduate of the University of British Columbia with the degree of Bachelor of Science in Geology (1981).

3. I am a member of the Association of Professional Engineers and Geoscientists of British Columbia (Registration No. 19236) and a Fellow of the Geological Association of Canada (Membership No. F5201).

4. I have continuously practiced my profession in North America and worldwide since 1981, having worked as an employee and consultant for Major Mining Corporations, Junior Resource Companies and government.

5. This report is based upon personal examination of all available company and government reports pertinent to the subject property, and upon fieldwork undertaken on the property from July to September 2013. I co-managed all field work undertaken on the property.

"Linda Dandy"
Linda Dandy, P.Geo.
Consulting Geologist

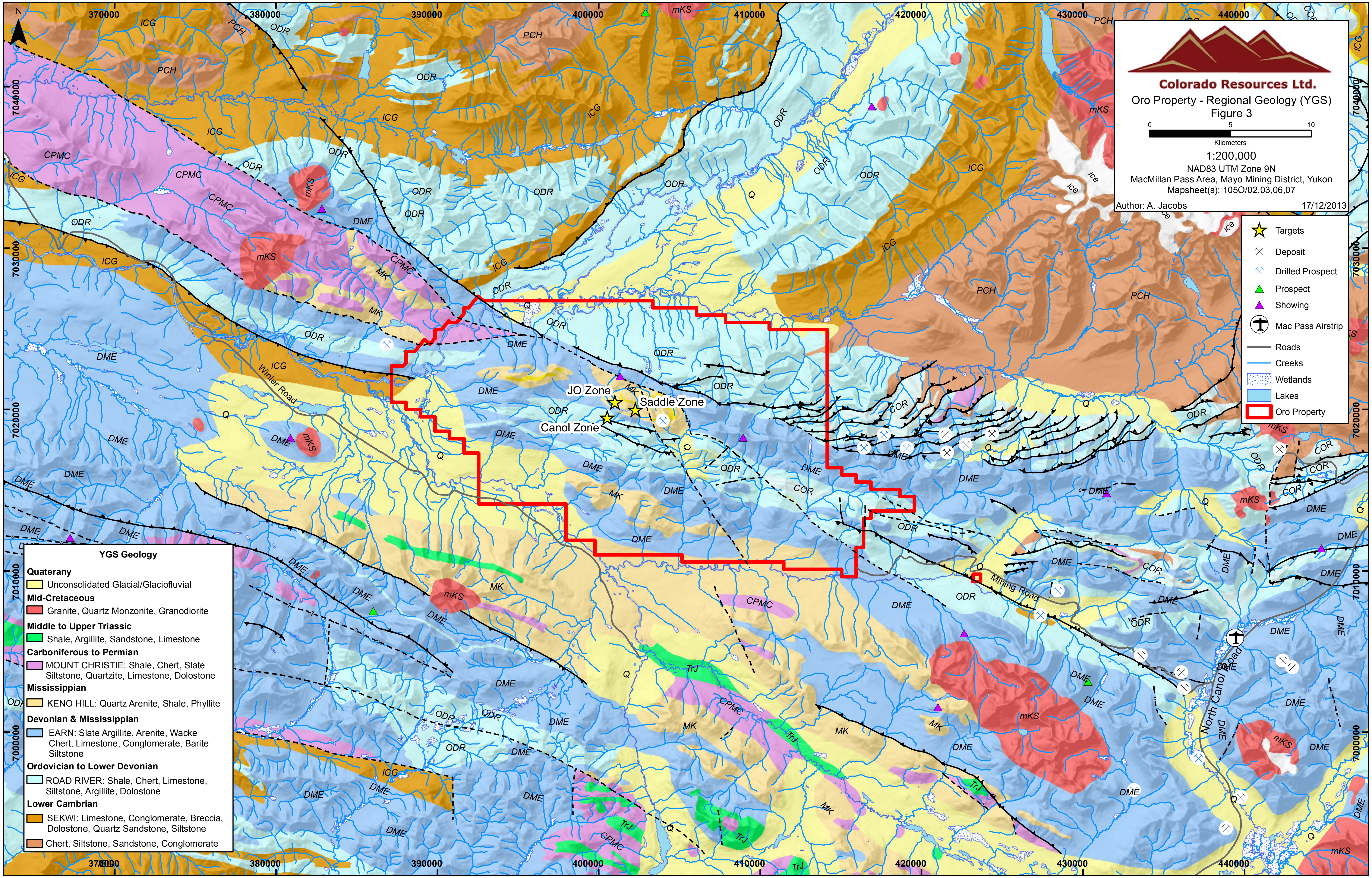
April 15, 2014
Atlin, BC

LIST OF APPENDICES

Colorado Resources Ltd.
Oro Project
ORO PROPERTY
MacMillan Pass
Alaska
Yukon
Dawson City
Mayo
Pelly Crossing
Carmacks
Faro
Ross River
Whitehorse
Atlin
145°W
140°W
135°W
130°W
125°W
70°N
68°N
66°N
64°N
62°N
60°N
58°N
N
0
100
200
Kilometers

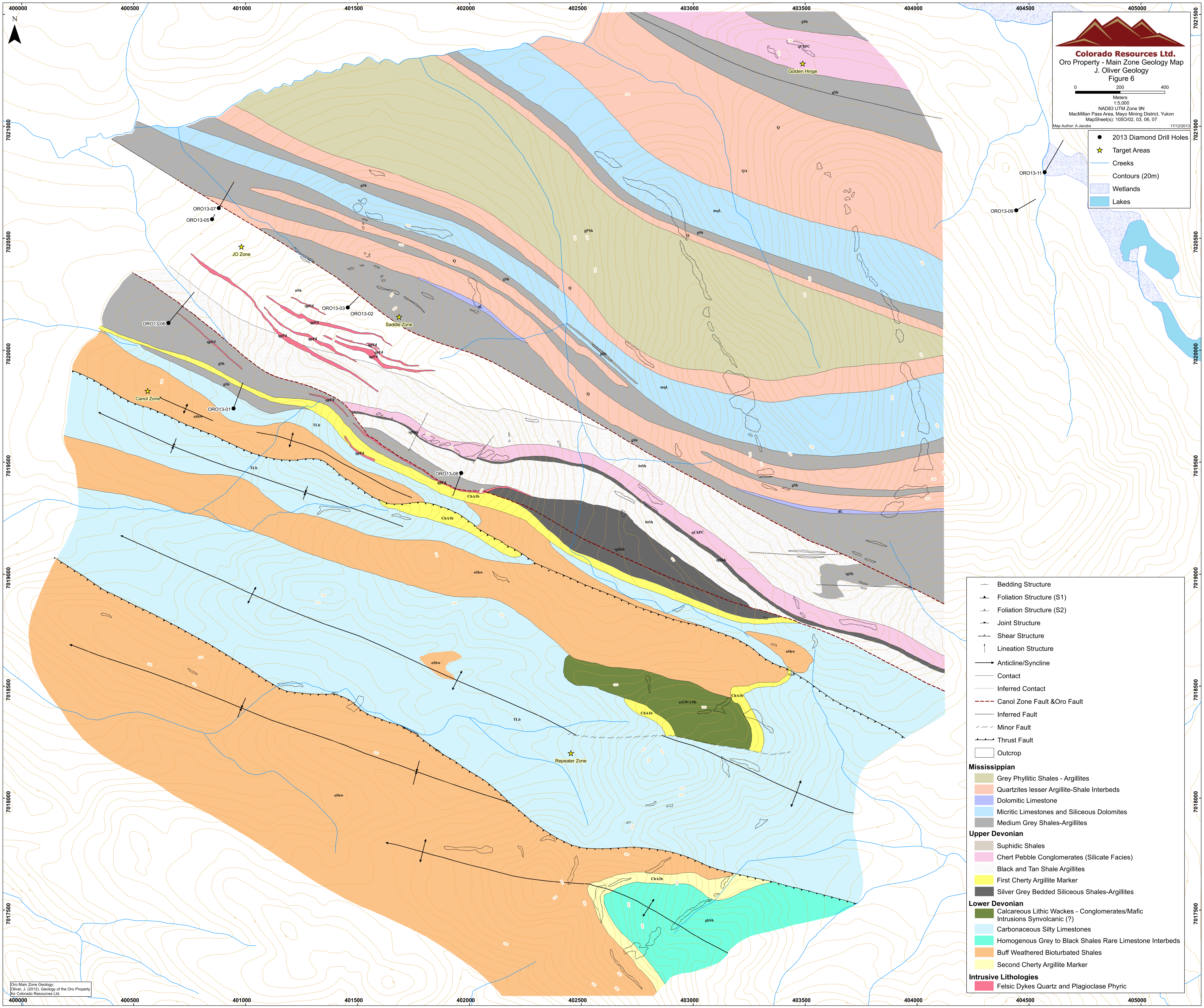
Figure 1

Colorado Resources Ltd.
Oro Property - Claim Map
Figure 2
Kilometers
1:25,000
NAD83 UTM Zone 9N
MacMillan Pass, Mayo Mining District, Yukon
Map Sheet(s): 105O/02,03,06,07
Map Author: A. Jacobs
16/12/2013
Limey Ridge
Blue Steel
Golden Hinge
JO Zone
North Steel Area
Twin Zone
Saddle Zone
Canol Zone
Golden Ridge
Repeater Zone
West's Zone
Area 51
Contours (200m)
Creeks
Wetland
Lakes
Oro Project Claims


Colorado Resources Ltd.
Oro Property - Regional Geology (YGS)
Figure 3
0 5 10
Kilometers
1:200,000
NAD83 UTM Zone 9N
MacMillan Pass Area, Mayo Mining District, Yukon
Mapsheet(s): 105O/02,03,06,07
Author: A. Jacobs
17/12/2013
Targets
Deposit
Drilled Prospect
Prospect
Showing
Mac Pass Airstrip
Roads
Creeks
Wetlands
Lakes
Oro Property
YGS Geology
Quaterany
Unconsolidated Glacial/Glaciofluvial
Mid-Cretaceous
Granite, Quartz Monzonite, Granodiorite
Middle to Upper Triassic
Shale, Argillite, Sandstone, Limestone
Carboniferous to Permian
MOUNT CHRISTIE: Shale, Chert, Slate Siltstone, Quartzite, Limestone, Dolostone
Mississippian
KENO HILL: Quartz Arenite, Shale, Phyllite
Devonian & Mississippian
EARN: Slate Argillite, Arenite, Wacke Chert, Limestone, Conglomerate, Barite Siltstone
Ordovician to Lower Devonian
ROAD RIVER: Shale, Chert, Limestone, Siltstone, Argillite, Dolostone
Lower Cambrian
SEKWI: Limestone, Conglomerate, Breccia, Dolostone, Quartz Sandstone, Siltstone
Chert, Siltstone, Sandstone, Conglomerate
JO Zone
Saddle Zone
Canol Zone
Winter Road
Mining Road
North Canol Road
370000
380000
390000
400000
410000
420000
430000
440000
7040000
7030000
7020000
7010000
7000000


Colorado Resources Ltd.
Oro Property - Property Geology Map
Figure 4
0 1 2
Kilometers
1:25,000
NAD83 UTM Zone 9N
MacMillan Pass Area, Mayo Mining District, Yukon
MapSheet(s): 105O/02,03,06,07
Map Author: A. Jacobs
17/12/2013
Target Areas
2013 Diamond Drill Holes
Roads
Contours (20m)
Creeks
Wetland
Lakes
Oro Claim Group
ORO13-04
Limey Ridge
ORO13-10
Blue Steel
Golden Hinge
ORO13-11
ORO13-09
ORO13-12
ORO13-07
ORO13-05
JD Zone
ORO13-06
ORO13-03
ORO13-02
Saddle Zone
ORO13-01
Canol Zone
ORO13-08
Golden Ridge
North Steel Area
Twin Zone
Repeater Zone
West's Zone
Winter Road
Area 51
ORO13-13
YGS Geology
Quaterany
Unconsolidated Glacial/Glaciofluvial
Mid-Cretaceous
Granite, Quartz Monzonite, Granodiorite
Middle to Upper Triassic
Shale, Argillite, Sandstone, Limestone
Carboniferous to Permian
MOUNT CHRISTIE: Shale, Chert, Slate Siltstone, Quartzite, Limestone, Dolostone
Mississippian
KENO HILL: Quartz Arenite, Shale, Phyllite
Devonian & Mississippian
EARN: Slate Argillite, Arenite, Wacke Chert, Limestone, Conglomerate, Barite Siltstone
Ordovician to Lower Devonian
ROAD RIVER: Shale, Chert, Limestone, Siltstone, Argillite, Dolostone
Lower Cambrian
SEKWI: Limestone, Conglomerate, Breccia, Dolostone, Quartz Sandstone, Siltstone
Chert, Siltstone, Sandstone, Conglomerate
Source: YGS: Digital Bedrock Geology of the Yukon
Abbott, J.G. MacPass Geology
Upper Devonian
Portrait Lake Formation Shale Facies
Prevost Foramtion Conglomerate Facies
Sandstone Facies
Itsi Formation
Itsi Formation Sandstone, Siltstone, & Shale
Middle & Upper Devonian
Portrait Lake Formation Fuller Lake Member
Middle Devonian
MacMillan Pass Member Conglomerate Facies
Sandstone Facies
Shale Facies
Lower & Middle Devonian
Niddery Lake Member
Lower Devonian
MacMillan Pass Volcanics
Lower to Upper Devonian
Conglomerate Facies
Earn Group Portrait Lake Formation Shale Facies
Upper Silurian to Middle Devonian
Sapper Formation
Upper Silurian
Steel Formation Green Shale and Mudstone
Early Ordovician to Middle Silurian
Duo Lakes Foramtion
Ordovician to Middle Devonian
Sapper, Steel, & Duo Lakes Formation Undivided
Cambrian & Ordovician
Gull Lake Formation
Upper Cambrian to Middle Ordovician
Rabbitkettle Formation Silty Limestone
Middle Cambrian
Hess River Formation Shale and Minor Limestone
Lower & Middle Cambrian
Sekwi Formation Limestone and Limestone Conglomerate
Neoproterozoic & Lower Cambrian
Hyland Group Narchilla Formation Shale Quartz Grit & Sandstone
Vampire Formation Shale, Siltstone, and Minor Sandstone
Cretaceous
Biotite Quartz Monzonite & Biotite Granite
Triassic
Jone Lake Formation Laminated Calcareous Sandstone & Shale
Permian
Mt. Christie Formation Siliceous Shale and Recessive Green Shale
Carboniferous & Permian
Mt. Christie Formation & Tsichu Group Undivided
Upper Devonian & Mississippian
Tischu Group Chert Facies
Tischu Group Caribou Pass Formation Bioclastic Limestone
Shale Facies
Sandstone Facies


Colorado Resources Ltd.
Oro Property - Property Geology Map
J. Oliver Geology
Figure 5
0 500 1,000
Meters
1:12,000
NAD83 UTM Zone 9N
MacMillan Pass Area, Mayo Mining District, Yukon
MapSheet(s): 105O/02,03,06,07
Map Author: A. Jacobs
17/12/2013
2013 Diamond Drill Holes
Target Areas
Creeks
Contours (20m)
Wetland
Lakes
Oro Property
Limey Ridge
Golden Hinge
Blue Steel
JO Zone
Saddle Zone
Twin Zone
Canol Zone
Golden Ridge
Repeater Zone
West's Zone
ORO13-01
ORO13-02
ORO13-03
ORO13-04
ORO13-05
ORO13-06
ORO13-07
ORO13-08
ORO13-09
ORO13-10
ORO13-11
ORO13-12
Bedding Structure
Foliation Structure (S1)
Foliation Structure (S2)
Joint Structure
Shear Structure
Lineation Structure
Anticline/Syncline/Overturned
Contact
Inferred Contact
Canol Zone Fault &Oro Fault
Inferred Fault
Minor Fault
Thrust Fault
Outcrop
Mississippian
Grey Phyllitic Shales, Argillites and Siltstones
Quartzites lesser Argillite-Shale Interbeds
Dolomitic Limestone
Micritic Limestones and Siliceous Dolomites
Medium Grey Shales-Argillites
Upper Devonian
Suphidic Shales
Black Fissile Shales
Chert Pebble Conglomerates (Carbonate Facies)
Chert Pebble Conglomerates (Silicate Facies)
Black and Tan Shale Argillites
Silver Grey Bedded Siliceous Shales-Argillites
Silver Grey Bedded Siliceous Shales/Homogenous Black Shales
Cherty Argillites and Siliceous Siltstones
Orange-Grey Siltstones and Shales
Lower Devonian
Calcareous Lithic Wackes - Conglomerates/Mafic Intrusions Synvolcanic (?)
Carbonaceous Silty Limestones
Homogenous Grey to Black Shales Rare Limestone Interbeds
Buff Weathered Bioturbated Shales
Intrusive Lithologies
Felsic Dykes Quartz and Plagioclase Phyric
Propoerty Geology:
Oliver, J. (2012). Geology of the Oro Property for Colorado Resources Ltd.



Colorado Resources Ltd.
Oro Property - Main Zone Geology Map
J. Oliver Geology
Figure 6
0 200 400
Meters
1:5,000
NAD83 UTM Zone 9N
MacMillan Pass Area, Mayo Mining District, Yukon
MapSheet(s): 105O/02, 03, 06, 07
Map Author: A Jacobs
17/12/2013
2013 Diamond Drill Holes
Target Areas
Creeks
Contours (20m)
Wetlands
Lakes
Golden Hinge
JO Zone
Saddle Zone
Canol Zone
Repeater Zone
ORO13-01
ORO13-02
ORO13-03
ORO13-05
ORO13-06
ORO13-07
ORO13-08
ORO13-09
ORO13-11
Bedding Structure
Foliation Structure (S1)
Foliation Structure (S2)
Joint Structure
Shear Structure
Lineation Structure
Anticline/Syncline
Contact
Inferred Contact
Canol Zone Fault &Oro Fault
Inferred Fault
Minor Fault
Thrust Fault
Outcrop
Mississippian
Grey Phyllitic Shales - Argillites
Quartzites lesser Argillite-Shale Interbeds
Dolomitic Limestone
Micritic Limestones and Siliceous Dolomites
Medium Grey Shales-Argillites
Upper Devonian
Suphidic Shales
Chert Pebble Conglomerates (Silicate Facies)
Black and Tan Shale Argillites
First Cherty Argillite Marker
Silver Grey Bedded Siliceous Shales-Argillites
Lower Devonian
Calcareous Lithic Wackes - Conglomerates/Mafic Intrusions Synvolcanic (?)
Carbonaceous Silty Limestones
Homogenous Grey to Black Shales Rare Limestone Interbeds
Buff Weathered Bioturbated Shales
Second Cherty Argillite Marker
Intrusive Lithologies
Felsic Dykes Quartz and Plagioclase Phyric
Oro Main Zone Geology:
Oliver, J. (2012). Geology of the Oro Property for Colorado Resources Ltd.
400000
400500
401000
401500
402000
402500
403000
403500
404000
404500
405000
7021500
7021000
7020500
7020000
7019500
7019000
7018500
7018000
7017500


Colorado Resources Ltd.
Oro Property - 2013 Rock Sample Locations
West Block of Property
Figure 7a
0 500 1,000
Meters
1:15,000
NAD83 UTM Zone 9N
MacMillan Pass Area, Mayo Mining District, Yukon
MapSheet(s): 105O/02, 03, 05, 06
Map Author: A. Jacobs
17/12/2013
N
P553302
P553303
P553304
P553301
P553407
P553406
P553408
P553405
P553223
P553224
P553435
P553222
P553221
P553220
2013 Rock Samples
Creeks
Contours (20m)
Wetland
Lakes
Oro Property
Map Key
West Block
5
Kilometers


Colorado Resources Ltd.
Oro Property - 2013 Rock Sample Locations
Center Block of Property
Figure 7b
0
500
1,000
Meters
1:15,000
NAD83 UTM Zone 9N
MacMillan Pass Area, Mayo Mining District, Yukon
MapSheet(s): 105O/02, 03, 05, 06
Map Author: A. Jacobs
17/12/2013
N
P553424
P553358
P553423
P553361
P553362
P553363
P553447
P553448
P553449
P553432
P553357
P553356
P553421
P553418
P553419
P553420
P553365
P553367
P553366
P553433
P553422
P553431
P553430
P553429
P553426
P553428
P553427
P553252
P553360
P553354
P553353
P553352
P553417
P553416
P553415
P553434
P553214
P553213
P553351
P553251
P553355
P553410
P553409
P553411
P553412
P553414
P553413
P553403
P553402
P553401
P553404
P553359
P553436
P553437
P553438
P553253
2013 Rock Samples
Creeks
Contours (20m)
Wetland
Lakes
Oro Property
Map Key
Center Block
5
Kilometers


Colorado Resources Ltd.
Oro Property - 2013 Rock Sample Locations
East Block of Property
Figure 7c
0
500
1,000
Meters
1:15,000
NAD83 UTM Zone 9N
MacMillan Pass Area, Mayo Mining District, Yukon
MapSheet(s): 105O/02, 03, 05, 06
Map Author: A. Jacobs
17/12/2013
N
P553440
P553255
P553254
P553439
P553441
P553256
P553257
P553259
P553445
P553444
P553442
P553446
P553260
P553443
P553215
P553217
P553216
P553219
P553218
2013 Rock Samples
Creeks
Contours (20m)
Wetland
Lakes
Oro Property
Map Key
East Block
5
Kilometers


Colorado Resources Ltd.
Oro Property - Drill Collar Locations on Geochemistry Map
Figure 8
0 1 2
Kilometers
1:25,000
NAD83 UTM Zone 9N
MacMillan Pass, Mayo Mining District, Yukon
Map Sheet(s): 105O/02,03,06,07
Map Author: A. Jacobs
09/01/2014
N
Limey Ridge
ORO13-04
Blue Steel
ORO13-10
Golden Hinge
Central Steel
ORO13-11
ORO13-09
ORO13-07
ORO13-05
JO Zone
ORO13-12
North Steel Area
ORO13-03
Saddle Zone
Twin Zone
ORO13-06
ORO13-02
ORO13-01
Canol Zone
Golden Ridge
ORO13-08
Repeater Zone
West's Zone
Area 51
ORO13-13
Target Areas
2013 Drill Holes
Contours (200m)
Creeks
Wetland
Lakes
Oro Property
Claim Grouping 1
Claim Grouping 2
Claim Grouping 3
21.4 ppb Au (95th Percentile)
3.3 ppm Ag (95th Percentile)
126.5 ppm As (95th Percentile)
22.7 ppm Sb (95th Percentile)
1.7ppm Tl (95th Percentile)

Appendix II - Structural and Lithological Characteristics: Central Steel Area - Oro Project, MacPass Yukon

Central Steel Area Reconnaissance Geological Evaluation: July 2013.

MacMillan Pass, Yukon Territory Canada.

Jim Oliver, Ph.D., P.Geo.

July 23, 2013.

Terms of Reference: The following document is in the form of a descriptive field report. It outlines and describes the principle lithologic and structural elements identified during two traverses in the Central Steel area on the Oro Claim package, currently under option to Goldfields Limited. The report documents field observations only and does not utilize or integrate historical geochemical or geophysical interpretations into these observations. Due to the very limited time frame and the small map area, from which these observations are based on, alternative conclusions are likely.

The lithological descriptions and unit modifiers formulated in this document provide the basis for the legend of lithologies on the scanned hand drawn 1:5,000 scale geological sketch which accompanies this report in a separate digital folder. The sketch map is a preliminary document and has not been formatted as a complete geological map. All planar fabric data discussed in this summary document are expressed in a dip direction convention.

Stratigraphic Elements – Rapid Overview.

The approximate 3 km long transect in the Central Steel area crosses 5 major sedimentary units and one intrusive rock unit. Most of these rocks exhibit numberous repetitions, and although some are stratigraphic, most are likely to be structural in origin. Principle stratigraphic elements in the Central Steel area include:

1. *Interbedded Shales and Siltstones (T, TSh, prefix modifier w = bioturbated).* These rocks are typically well bedded and are characterized by their brown to olive-grey-green weathering patterns. Both moderately friable shale members and more competant silty matrix units are noted. Relative to shale sequences south of the MacMillan Fault, these rocks likely have higher silica contents and lower clay contents. Minor grit interbeds may sometimes be identified. plate 1. These rocks are commonly bioturbated, plate 2. At some locales worm tubes have been selectively infilled with clear to yellow-grey silica. Fine grained, less than 25 micron, pyrite grains may be identitified within the rock matrix. In a very general sense, the colour of the shale sequences reflect oxygenation conditions at the time of deposition. Olive-grey-green shales are deposited under conditions of higher net oxygenation, and on average shallower water depths, than black shales.

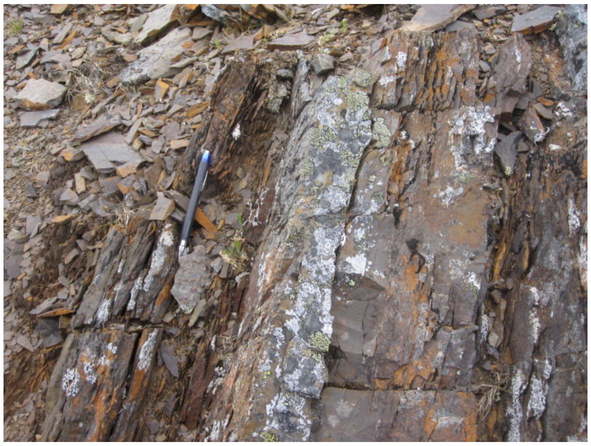
 a  b

Plate 1. Interbedded Shale – Siltstone-Grit Units. Olive-green to brownish weathering shales are documented throughout map area. These units are typically non-calcareous and range in composition from fine grained olive brown shales, to more compentent tan to light brown siltstones, Plate 1a. These units may contain distinctive grit lamella which are typically less than 5 cm in width, Plate 1b. Unit identifier, T, TSh.

 a  b

Plate 2. Bioturbated Shales – Siltstones. Most of the rock units in the Central Steel area exhibit some form of bioturbation, most commonly noted as worm tube casts, Plate 2a. The level of textural preservation of these very delicate features in these greater than 400 Ma (?) rocks is remarkable. In plate 2b, the direction of travel of the organism, noted from the fluted internal cast marks, is from left to right. Unit identifier, wT, wTSH. Blue finger for scale.

2. *Bioturbated Cherts and Argillaceous Cherts (unit codes, ACh, Ch, prefix modifier = w).*

Multiple chert beds are mapped in the Central Steel area. These beds range in thickness from only a few m to several 10's of m. They vary in colour from dark grey-black, to purple-brown, buff to light cream. Virtually all of these beds exhibit some level of bioturbation with small elongate worm tubes infilled with light cream, crystalline silica. The beds are themselves cut by numerous extension veinlets. These small quartz veinlets have orientations which suggest they have formed during, early (D1) deformation. Very small sulphide grains are commonly identified within the concoidally fractured matrix of individual beds. Most of these grains are less than 25 microns and it is likely that they are pyrite. Definitive determination of the nature of these sulphide grains cannnot be made solely on the basis on hand specimen data. Chert beds commonly develop a north-south orientated joint set which is forming perpendicular to the dominant S1 fabric.

The nature and origin of silica in this unit may have two differing sources. The rock may be interpreted either as a chert horizon, which is bioturbated by silica phyllic organisms (silica is primary) or is a bioturbated shale unit which is completely replaced by secondary silica (silica is introduced).


a


b

Plate 3. Bioturbated Cherts. Well bedded cherts commonly exhibit near identical froms of bioturbation to that noted in buff weathering shale sequences. Macroscale data may suggest that some of the silica within the bioturbated chert sequences may have been intruduced post-diagenesis. However, the planar form of chert horizons and the general absence of any indication of higher temperature hydrothermal mineral assemblages would suggest that most of the silica in these units is unlikely to be hydrothermal in origin. Chert horizons in this area range in color from black, brown, red brown, purple to light cream. On plate 3a, elongate worm tracks are completely infilled with light grey to translucent silica. On plate 3b, an array of small extensional veins is forming perpendicular to primary bedding (So) and to the orientation of the dominant penetrative fabric (S1). Unit identifier: wACh.

Chert beds in the Central Steel area are laterally persistant thin beds sometimes separated by narrow, fine grained clastic horizons. These kinds of patterns strongly suggest that these chert units are part of a deep water turbidite succession. Thickening and thinning of these beds will likely be a reflection of basement topography. The very planar nature of these beds suggest that this siliceous turbidite sequence has been deposited in a topographically subdued basin. Based on the abundant evidence of biological activity, the water depths are likely to have have been modest and generally higher than the anoxic boundary, about 200 m in most stratified water columns.

3. *Interbedded Buff to Orange Shales with Iron Carbonate Lamella. (unit codes TSHL, oTSh).*

This rock unit is likely the only correlative rock unit identified during the 2012 map season. At that time, a single traverse line, north of the Golden Ridge area traversed from the distinctive Mac Pass conglomerates into a buff to orange weathering shale unit. In the Central Steel area these rocks are characterized by the presence of orange-buff weathering, iron carbonate rich limy beds within moderately fissile, brown to olive-brown shales. Although this broader unit may contain shale intervals which lack significant limy beds, those intervals are subordinate to beds containing iron carbonate rich beds. Iron carbonate rich beds are not bioturbated but the enclosing shales adjacent to them may be. These rocks are typically slightly more resistive to weathering than shale-siltstone sequences which lack limy interbeds; as a consequence they often form resistive topographic highs, plate 4.

Plate 4. Interbedded Iron Carbonate Rich Limestones and Shales. Many of the shale sequences in the extreme southern and central map areas contain significant percentages (10 – 15%?) by volume of 20 to 50 cm wide iron carbonate lamella. These units form low intensity, light yellow-orange colour anomalies in a regional rock section that is otherwise dominanted by subdued buff , grey, and olive-brown rocks. Unit identifier, TSHL, oTSh.

4. "Micro-nodular" Shale (unit code ndSh).

This rock unit is associated with both limy shale-siltsones and non-calcareous olive brown weathering shales and siltstones. It commonly has a slightly undulose foliation surface and is typically dark grey to black in colour, plate 5. The matrix of the rock is composed of two primary elements:

a. Abundant mm to sub-mm, orange coloured ovoid aggregates. In many respects, these aggregates appear to be porphyroblastic and locally deflect the foliation surface within the rock mass. The overall texture of the aggregates is vaguely colliformal. Although they appear to be compositionally iron carbonates, their small size precludes positive identification at the hand specimen scale.
b. Fine grained, pale greenish-gray silt sized particles. Although the rock unit appears "black" its somewhat surprising that the matrix of this rock unit often appears to be formed from abundant very small quartz-mica grains.

At the scale of a 1:5,000 scale map, with a limited traverse coverage, this rock unit does not form an indiviual map or marker unit.


a

b

Plate 5. Micro-nodular Shales. Dark black, moderately friable shales are identified as micro-nodualar shales when the matrix of this unit contains small, typically round orange porphyroblasts or early diagnetic aggregates. Most of these micro-nodules are under 3 mm in length and are not associated with any other sulphide phases. In hand specimen, plate 5a and 5b, these rocks are one of the few units that do not display evidence of bioturbation. Unit identifier, ndSh, ndTSh.

5. Argillites – Sheared Argillites. (unit code A)

At several locations fine grained jet black argillite beds are identified. It is likely that geologists for the Yukon Geological Survey are using these beds to define the locus of south verging thrust faults. In at least one locale in the Central Steel area that may be the case, plate 5. These rocks often form recessive weathering jet black clay zones which are dominated by abundant commuted clastic fragments. Rotational fabrics are not identified within these limited exposures. However, several of these argillite beds are documented within the 3 km traverse area and several of them are likely to be stratigraphic, not structural features.

In some locations, black argillite sub-cropping zones appear to develop near the contact between competent chert horizons and less competent calcareous, iron carbonate shales. The observation that these beds appear to deform around the axial traces of synform-antiform couples would suggest that at least some of these black clastic horizons have stratigraphic origins.

In some of the sub-cropping zones, black clastic chips appear “punky” and have an anomlously low specific gravity and they are never reactive to the application of 10% HCl. At the same locales, these punky, “light” rock chips also appear to be coated by yellow (arsenical?) oxides on fracture sets.

Plate 6. Trace of Black Argillite Structural Zone. The yellow trace defines the approximate location of a 25 m wide zone of strongly commuted black argillite chips and fragments, A – Z? on this plate. This rock mass, and its position, may represent the locus of one of the interpreted south verging thrust faults mapped by the Yukon Geological survey in the Steel area. The field of veiw of the ridge line on this photograph is in the range of 400 to 500 m and is veiwed looking north from Oliver’s July 2013 waypoint station 288.

6. *Felsic Dykes (unit code Fd).*

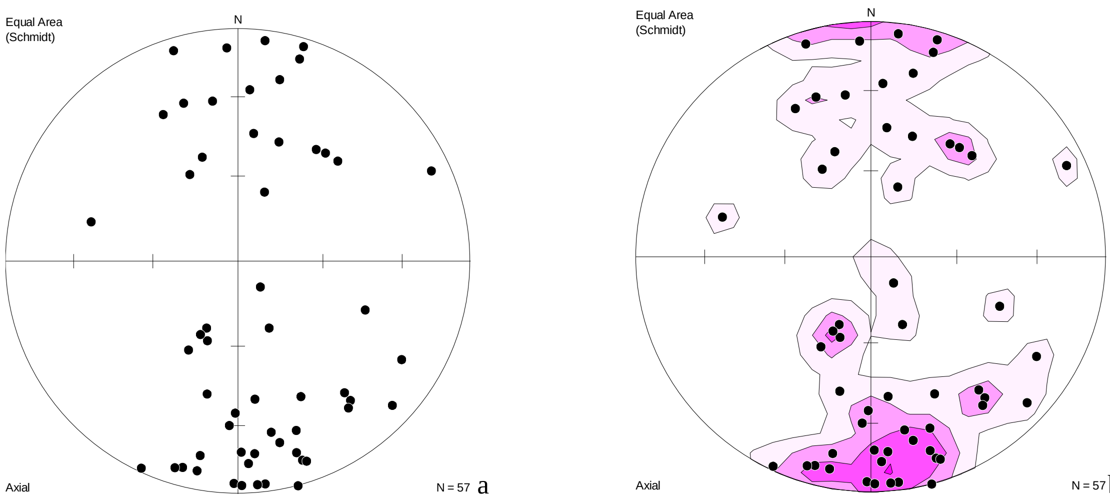
In the extreme northeastern map area, a three to five m wide felsic dyke is noted. The dyke outcrops at two traverse positions separated by approximately 500 m. This intrusive rock appears similar to the dykes noted in the Main Zone of the historic Neve/Brick occurrence. In the Central Steel area, narrow felsic dykes are extensively altered with most primary plagioclase feldspars converted to fine grained white micas. Although based on limited traverse data, these linear intrusions are not associated with enhanced iron oxides or exhibit intact sulphide phases.

Structural Elements – Rapid Overview:

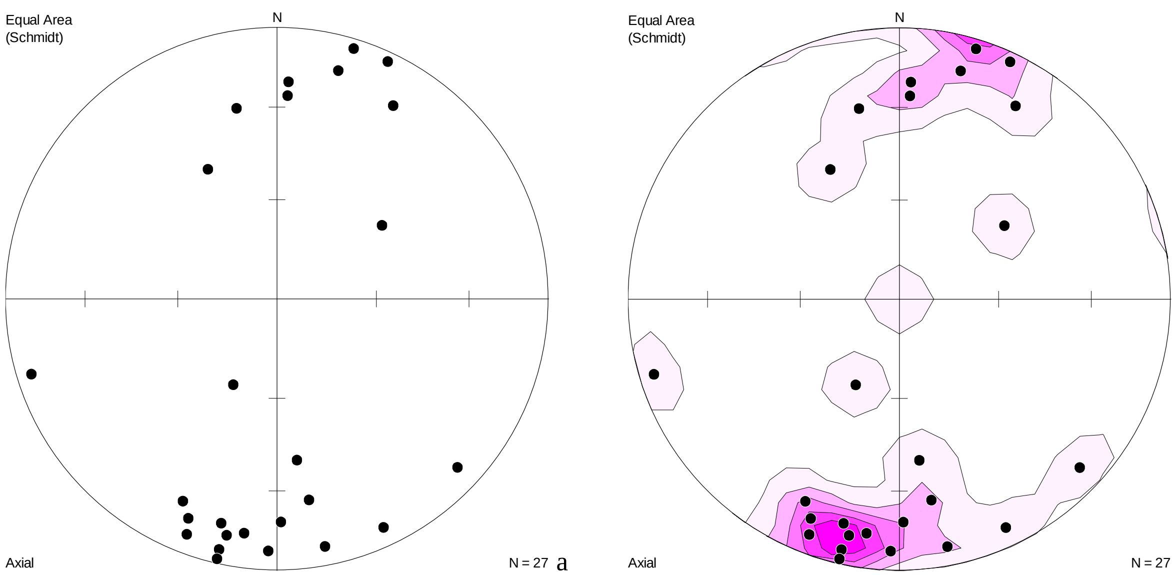
Fold Patterns:

Within the Central Steel map area, moderate west plunging synform-antiform couples form the dominant structural element. These folds have an interlimb distance of approximately 750 to 1000 m. Three lines of evidence conclusively demonstrate the fold relationships:

1. The intersection lineation formed between major north dipping bedding pole clusters, $355^o/80^o$ and south dipping pole clusters, $218^o/50^o$ produce an intersection lineation at $35^o \rightarrow 272^o$. This calculated plunge direction between the orientation of major beds is equivalent to that obtained from directly observing the bedding-cleavage intersection lineations between bedding (So) and early cleavage (S1) with L_{01} noted at $39^o \rightarrow 285^o$ (Stereonet 1).
2. Beds with well defined marker units, e.g. bioturbated chert horizons, may be traced across fold closures (geological sketch map, attached digital folder)
3. Symmetry of rock units occurs across the axial trace of these folds. The axial trace of these folds is approximately east-west and parallels the orientation of S1 cleavages (Steronet 2).
4. Limited data suggests much smaller scale D2 folds with north trending axial traces with approxiately 25 m interlimb distances may be present in the Central Steel map area. These late folds do not significantly perturb the overall trend of the marker horizons and no map scale interference patterns are produced.



Stereonet 1. Contoured Poles to Bedding Central Blue Steel Area. The pole postions of 57 bedding measurements are illustrated on Stereonet 1a. These poles are contoured on stereonet 1b. Both data sets demonstrate a dispersion trend (girdle) across a north-south axis. The majority of the beds are steeply north dipping at $355^o/80^o$ (dip direction). Much weaker clusters, $25^o/30^o$ and $218^o/50^o$ (dip direction) demarcate the orientation of folded and rotated shallow north or moderately south dipping beds.



Stereonet 2. Contoured Poles to “S1” Fabrics. The poles to 27 penetrative planar fabric measurements are shown on stereonent 2a. The strong lower hemisphere pole concentration on stereonet 2b corresponds to a dip direction of $12^o/81^o$. This orientation defines a steeply north dipping, east-west striking penetrative fabric. The orientation of this fabric suggests that it is an axial planar cleavage to the D1 folds identified across the Central Steel area. The relatively minor dispersion in this data set suggests that penetrative deformation post-dating D1 has not significantly modifed the distribution pattern of these fabrics.

a

b

Plate 7. Rotated Chert Beds. On plate 7a, the chert beds which form the southern limb of the main synform in the Central Steel area have upright to steep north dipping beds. On plate 7b, chert beds in the core of the synform have rotated to shallow west dips. The beds illustrated on plate 7b have a dip directon of $326^{o}/12^{o}$.

Faults:

A single significant fault trace is interpreted on the attached geological sketch map (digital folder). This structural zone is localized in a jet black, strongly carbonaceous argillite. The trace of this fault is illustrated on plate 6. The zone never outcrops and is identified only by small angular cm scale black chips exposed in sub-crop. This structural zone is interpreted as a south verging thrust fault. That interpretation is based on very limited data and may be revised.

Recommendations:

The soil – talus fines and rock geochemical data in the Central Steel area defines a large and semi-continous zone of enhanced gold-silver chemistry. The preliminary lithological and structrual data illustrated on the attached geological map suggests that geochemically anomalous rock and soil samples in the Central Steel area should be given an higher exploration priority. Some attempt should be made to formualate answers to the following:

1. Which specific rock units, if any, are associated with the gold and silver geochemical anomalies in the Central Steel area?
2. Is their a correlation between the interpretated trace of regional scale faults, e.g. the commuted black argillite units which may represent the trace of thrust faults, and anomalous geochemistry?

3. Is there a correlation between the axial traces of major and minor folds and anomalous soil and rock gold-silver geochemistry? Are the geochemically anomalous zones tracking dilatant points forming at the juxtaposition of hard (chert) versus soft (siltstone – shale) units?
4. What is the origin of fine grained silica within bioturbated chert beds? In some cases, the silica in these rocks may be secondary. At other locales, silica within these chert horizons appears to be primary. Is there an assoication between elevated gold-silver chemistry and zones of possible secondary silica within bioturbated cherts?
5. Expand the map area. The current geological map coverage is extremely limited, at approximately 3.5 sq km and the data on the attached geological sketch map represents less than 15 hours of field time. The geological and structural interpreations in this area, and the interpretation of the geochemical and geophysical data, would be substantially improved with an expanded geological base.

Jim Oliver (Ph.D., P.Geo.)

July 23, 2013. Kamloops, B.C.


- Central Blue Steel Geology.
July 2013.
A. Olin (PRELIMINARY DATA)
- Legend as in July 23/2013
Word document
- Scal 1:5,000.
409704
7021383

Appendix IIII - Surface Assays

See Data Folder

for Data

Appendix IV - Rock Sample Assay Certificates

See Data Folder for

secured assay

certificates

Appendix V - Diamond Drill Logs and Summaries

Gold Fields Selwyn – Quicklog 2013

Hole no: ORO13-01 Logged By: Tim Stubley	Az: 020°	Dip: -50°	Target depth: 300 m	EOH: 191.41m	
Start date:24/07/2013	End date: 27/07/2013	Pad: ORO13-F	E: 400946	N: 7019740	Elevation: 1410 m
Target: ORO13-01 tests a geochem anomaly that is located south of the Canol Fault. Collared to intersect permissive decarbonatised limestone (Sapper Formation) in contact with siliceous shales, siltstones and argillites. Drills through AMag and Res gradient.			Target explained? Primary sulphides appear to occur throughout ORO13-01, but pyrite veins intersected in limestone represent a possible secondary mobilisation. ORO13-01 was designed to collar in Limestone, but bioturbated shale occurs at top of bedrock. This shifts the surface contact significantly to the north, and suggests that mapped contacts may reflect downslope slump of talus. Bedding angles appear to be consistent with those mapped.		

Summary:
Location: ORO 13-F is situated ~500 SW of historic hole B-5-85 in the Oro Main Zone.
Lithology: Overburden to 7.2, followed by strongly weathered shale (ShU) to 16.26m, at which point shale becomes more competent and bioturbation textures become evident (oShw) to 26.5m. Bioturbated shale overlies (faulted contact 26.5 – 29.87m) massive to bedded limestone (Ls) and minor calcareous shale to 68.23m. A ~4m zone of carbonate+quartz veins characterises the conformable contact between limestone and underlying planar- laminated to massive black calcareous shale that extends to EOH at 191.41m.
Alteration: Fracture controlled Fe oxide (limonite/goethite or similar) alteration is common on shear planes and within fault zones to 29.87m. Disseminated and vein envelope Fe carbonate alteration occurs within limestone and the shale beds proximal to contact with limestone.
Mineralization: Pyrite occurs as vuggy nodules in bioturbated shales from 16.25 to 19.2m**.** From 29.87m, limestone contains abundant (~5%) disseminated and local network vein hosted pyrite. Pyrite stringers are sheeted ~parallel to a cleavage that offsets earlier carbonate veins to 57.37m. Fine grained bedding parallel (possibly primary) dissemination of pyrite extends to 64.2m. From 64.2m pyrite abundance decreases; occurring as lenticular nodules elongate to bedding, fine-grained bedding parallel layers, and very rare <20cm beds of massive pyrite+carbonate.
Interpretation/Comments: Primary sulphides appear to occur throughout ORO13-01, but pyrite veins intersected in limestone represent a possible secondary mobilisation. ORO13-01 was designed to collar in Limestone, but bioturbated shale occurs at top of bedrock. This shifts the surface contact significantly to the north, and suggests that mapped contacts may reflect downslope slump of talus. Bedding angles appear to be consistent with those mapped.

Shift	From	To	Comments
July 24/2013 DS: 0 - 27m NS: 27 – 56.20m	**0**	**7.62**	**Overburden**
	7.62	**16.25**	**Undifferentiated shale (ShU)** Brown to black highly weathered and oxidised shale. Blocky rubble. Where core is intact rock is strongly weathered and

			very soft (can be indented with fingertip).Abundant fault gouge. Bedding indistinguishable but apparent cleavage fabric is steep tca. FeOx on fracture planes and throughout rubble zones. No visible sulphides
	16.25	**19.20**	**Bioturbated shale (oShw)** Short (<20cm) sections of intact, relatively harder core (scratches easily with knife tip). Slightly carbonaceous, rare weak reaction to Hcl. Common rubble and gouge, up to 40cm core loss between blocks. Moderate rusty FeOx alteration on fracture planes. Apparent bioturbation texture; could be wispy ripples. If these represent bedding then angle is between 30 and 50 deg tca. Abundant pyrite occurs as fine grained dissemination that highlights fabric/texture, also at core of vugs, with margins filled by white elongate mineral 'fibres' curving out from right angles to pyrite core. Possibly reflecting pressure shadow around pyrite? Rare thin white veins, very soft. Possibly gypsum. May be associated with pyrite. **Py ~5%**
	19.2	**26.5**	**Faulted, strongly weathered ?Bioturbated shale (oShw)** Rubble zone with rare intact core. Common fault gouge. Relict pyrite 'vug' texture and minor disseminated pyrite locally visible. Strong local FeOx. **Py ~1.5%**
	26.5	**29.87**	**Faulted shale and limestone (oShw and Ls)** Blocky rubble and gouge. Core loss in sections up to 1.15m, total ~2.25m. Rusty FeOx within rubble and on fracture planes. **Rare pyrite traces.**
	29.87	**53.48**	**Undifferentiated limestone/Calcareous mudstone (Ls/MdstCal)** Light grey, massive to shaly- textured, relatively competent core. Wispy ripples (or possible bioturbation) is common, and may be similar to that in up-hole intervals logged as bioturbated shale. Moderate to strong reaction to Hcl. Common rubble zones: may be associated with thin black shaley interbeds. Abundant graphite on fracture planes Abundant fine grained pyrite: nodular to disseminated, locally in veins but commonly occurring along cleavage planes. May be associated with carbonate and replace rock in zones up to 3cm, roughly parallel to cleavage. Possible pressure shadow development around pyrite clusters that are elongate parallel to cleavage. Local grey-black <1mm sulphide veins roughly parallel to and cross cutting cleavage, locally with strong Fe carbonate alteration haloes. **Py~5% overall**
	53.48	**57.37**	**Undifferentiated limestone/ Calcareous mudstone (Ls/MdstCal)** Massive grey limestone with apparent cleavage fabric shallow tca.

			Bedding indistinct but may be highlighted by thin dark grey wispy pyritic horizons (parallel to cleavage). Some fracture planes preserve secondary crenulation cleavage. Sheeted/stockwork pyrite stringers with dark grey margins (<2mm, >20/m, 10-50°tca) commonly parallel a cleavage fabric that cross cuts and offsets carbonate veins. Quartz ± carbonate veins cross cut earlier carbonate veins, may have fine grained sulphide envelopes. Sheeted carbonate veins locally form around/contain blocky-platy cubic black mineral with glossy lustre. This mineral crumbles brittly. **Py ~ 6%, black mineral ~0.5% overall but occurs locally.**
July 26/2013 DS/NS: 56.20-112.79m	**57.37**	**62.10**	**Bioturbated shale (oShw)** Light grey bioturbated shale. Sharp ~50°tca conformable upper contact. Bedding parallel lenticular bioturbation structures steepen to ~15°tca after fault at ~59.60m. Rare carbonate veins <1mm. Very weak Hcl reaction. Abundant bedding parallel disseminated pyrite. **Py ~3%**
	62.10	**64.20**	**Limestone (Ls)** Laminated limestone (~20°tca) with minor local bioturbation features. Common <3mm carbonate veins, 15 -35°tca, rare local carbonate cemented breccia with angular granule to pebble- sized clasts. Strong disseminated pyrite. **Py ~4%**
	64.20	**68.23**	**Quartz-Carbonate veins in black shale (Vein)** Interval dominated by < 6cm thick vuggy carbonate+quartz vein network oriented ~ 50°tca. Veins have fluidic margins. Common disseminated pyrite in black carbonaceous shale wallrock. **Py~ 2%**
	68.23	**75.0**	**Carbonaceous Black Shale- weak carbonate. (ShU)** Black carbonaceous weakly laminated shale. Glossy polished graphitic cleavage/fracture surfaces ~20 to 40°tca. Common sheared sections. Common wispy carbonate veins, but very weak reaction to Hcl in wallrock. Rare pyrite nodules, elongate to cleavage fabric <3cm long, <1cm thick. Local weakly disseminated pyrite. **Py~ 1%**
	75.0	**87.55**	**Carbonate rich laminated black shale with pyrite nodules (ShU)** Carbonaceous black shale as above. Increased carbonate; strong reaction to Hcl. Well developed thin laminations truncated/offset by shearing. Local open synformal closure ~81.5m. Glossy polished graphitic cleavage/fracture surfaces ~20 to 40°tca. Increased carbonate veins <1cm (commonly <3mm). Veins cross cut cleavage locally but are commonly truncated by shearing.

			Common lenticular pyrite nodules, elongate parallel to bedding fabric ~ 30 - 50° tca. Local very fine grained disseminated pyrite. **Py ~3%**
	87.55	**115.27**	**Carbonate- rich black shale (ShU)** Carbonaceous black shale. Abundant carbonate; strong reaction to Hcl. Bedding commonly obscured by shearing, but thin laminations are common. Common sections graphitic fault gouge and shaly rubble. Carbonate veins, up to 5cm but commonly <3mm, truncated by shearing. Local fault related (?) zones of carbonate cemented shale breccia. Local monomictic clast supported shale breccia with tectonic fabric ~30°tca. Rare pyrite nodules, local very fine grained weakly disseminated pyrite. **Py ~1%**
July 27, 2013 112.79 – 191.41m EOH (Reduced to NQ at 155.75m)	**115.27**	**123.49**	**Fault** Zone dominated by sandy carbonaceous fault gouge and graphitic rubble. Poor recovery; ~227cm of lost core.
	123.49	**155.75**	**Thinly laminated carbonate- rich black shale (ShU)** Carbonaceous mudstone with locally well developed laminations defined by thin bands of very fine grained carbonate sediment ~ 50 - 60°tca. Moderate to strong reaction to Hcl throughout. Common fracturing and shearing offsets bedding. Polished graphite coats shear/cleavage planes, which are ~parallel to bedding. Common discontinuous carbonate veins (±rare quartz) occurs both parallel to and cross cutting bedding. Rare massive pyrite occurs as lenticular nodules elongate to bedding/cleavage. **Py ~1%**
	155.75	**191.41**	**Thinly laminated carbonate- rich black shale (ShU)** Grey to black carbonaceous mudstone with locally well developed laminations and <30 cm massive black graphitic beds. Moderate to strong Hcl reaction throughout. Bedding ~60°tca. Common fracturing and shearing 30-45°tca offsets bedding. Common gouge and zones of poor recovery. Polished graphite and/or talc coats shear/cleavage planes, which are ~parallel to bedding. Common discontinuous carbonate veins occur parallel to and cross cutting bedding. Sheeted carbonate vein sets <4cm long occur as extensional features normal to and within healed shears, and as local carbonate cemented breccia proximal to shearing. Single occurrence of euhedral gypsum crystals in shear zone ~187.9m associated with dirty yellowish crystalline fibres of (?) scorodite. Same mineral (? scorodite) occurs locally on fracture planes. Bedding conformable lens of massive pyrite and carbonate 165.47 to 165.62. Weak trace fine- grained disseminated pyrite throughout ~0.5%.

			Py~ 1% overall.

GeoSpark Logger Print Logs ~ Collars

DataSet: **ORO_GF**

Depth (m)	Hole Type	Core Diamete	Grid ID	East	North	Elevation	Survey Method	Survey Date	Survey By	Date Started	Date Completed	Logged By	Prospect	Validated By

Hole: ORO13-01

Depth (m)	Hole Type	Core Diamete	Grid ID	East	North	Elevation	Survey Method	Survey Date	Survey By	Date Started	Date Completed	Logged By	Prospect	Validated By
191.41 m	DD	HQ	UTM09N_NAD83	400946	7019740	1410	GPS	19/07/2013	RC	24/07/2013	27/07/2013	TimS	Main Zone	

Collar planned in limestone however intersected ~30 m bioturbated shale overlying limestone. Strong pyrite mineralisation in limestone unit. See quicklog for details.

GeoSpark Logger Print Logs ~ DH Surveys

DataSet: **ORO_GF**

Hole ID: **ORO13-01**

Depth (m)	Survey Method	Grid ID	Dip	Surv. Tool Azimuth	Magnetic Declination	Corrected Azimuth	Magnetics	Date Surveyed	Survey Instrument	Bad Reading	Comments
0	COLL	UTM09N_NAD83	-50	20				27/07/2013	CMP	☐	
14.63	EZ Shot	UTM09N_NAD83	-50.3	4.3	22.5	26.8		28/07/2013	EZ	☑	Survey tool azimuth 4.3 or 43? Need to clarify
74.07	EZ Shot	UTM09N_NAD83	-51.8	8	22.5	30.5		25/07/2013	EZ	☐	
136.25	EZ Shot	UTM09N_NAD83	-52	1.2	22.5	23.7		26/07/2013	EZ	☐	
191.41	EZ Shot	UTM09N_NAD83	-51.2	1.5	22.5	24		28/07/2013	EZ	☐	

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Signed: ______________

DataSet: ORO_GF

Hole ID: ORO13-01

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	0	7.2	Overburden	Overburden (OB)	

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	7.2	16.25	Black Shale	undifferentiated shale	Black VS weathered shale rubble. Abundant gouge. FeOx on frac planes. Indistinct bedding but cleav fabric steep tcs. No sulphide visible

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	7.2	16.25	UnMin	0											No visible mineralisation

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	7.2	16.25	NoVeins	n/a											

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	7.2	16.25	RUB	VS	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	16.25	19.2	Black Shale	Bioturbated shales	Grey-black shale w/ apparent bioturbation or wispy ripples @30-50tca. Rare wk reaction to Hcl. Comn rubble. Abun fg dis Py highlights fabric, comn vugs w/ py at core and poss gypsum/zeolite margins. Py~5%.

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DataSet: ORO_GF

Hole ID: ORO13-01

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
16.25	19.2	Py	5	DIS										Abundant pyrite occurs as fine grained dissemination that highlights fabric/texture, also at core of vugs, with margins filled by white elongate mineral 'fibres' curving out from right angles to pyrite core.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
16.25	19.2	Vgyp	±py±hem	0.5										Rare thin white veins, very soft. Possibly gypsum. May be associated with pyrite.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
16.7	16.9	FLTG	VS	
16.9	17.69	RUB	S	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	19.2	26.5	Black Shale	Bioturbated shales	Rubble zone with rare intact core. Common fault gouge. Relict pyrite 'vug' texture and minor disseminated pyrite locally visible. Strong local FeOx. Py ~1.5%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
19.2	26.5	Py	1.5	DIS										Relict pyrite 'vug' texture and minor disseminated pyrite locally visible. Strong local FeOx. Py ~1.5%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
17.69	26.5	RUB	VS	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	26.5	29.87	Tectonic/Fault Rock - Undifferentiated	Fault (UT)	Faulted shale and limestone (oShw and Ls) Blocky rubble and gouge. Core loss in sections up to 1.15m, total ~2.25m. Rusty FeOx within rubble and on fracture planes. Rare pyrite traces.

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Signed: ____________

DataSet: **ORO_GF**

Hole ID: **ORO13-01**

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
26.5	29.87	Py	0.2	DIS										Rare pyrite traces.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
19.2	29.87	NoVeins	n/a											rubble,no visible veins

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
26.5	29.87	FLT	VS	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	29.87	53.48	Mudstone - Calcareous	Limestone - nonspecific	Lt grey mass-shaly limestone or calc mudstone. Wispy ripple/bioturb. Mod-S Hcl reaction. AbunPy in vns, vugs, par to cleav. Dk grey sulph str w/ Py+Carb alt halo X-cut carb veins and cleavage. Graphite common

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Signed: ______________

DataSet: ORO_GF

Hole ID: ORO13-01

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
29.87	53.48	Py	5	VEN										Abundant fine grained pyrite: nodular to disseminated, locally in veins but commonly occurring along cleavage planes. May be associated with carbonate and replace rock in zones up to 3cm, roughly parallel to cleavage.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
29.87	53.48	Vpy	±carb	2	Vcarb	±qtz±py								Abun fg py, locally in veins.Local grey-black <1mm sulphide veins roughly parallel to and cross cutting cleavage, locally with strong Fe carbonate alteration haloes.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
29.87	33	RUB	S	
33	33.01	FOL		65
33.01	33.02			45
33.02	35.8	RUB		
35.8	35.81	FOL		60
35.81	35.82			35
35.82	37	RUB		
37	37.2		VS	
37.2	38.75		S	
38.75	39		VS	
39	43.6			
43.6	44.55		S	
44.55	49.68			
49.68	53.48		VS	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	53.48	57.37	Siltstone - Calcarous	Limestone - nonspecific	Mass-slaty grey limestone, app cl fab shallow tca. Bg may be hilited by thin dk wispy sulphitic horzons. 2ry cren cl on planes. Sht/stkwk py str v comn, Xcut and offset carb vns and 1cl. Black cubic min w/in local carb vns. ~6% Py

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Signed: _______________

DataSet: ORO_GF

Hole ID: ORO13-01

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
53.48	57.37	Py	6	VEN										Sht/stkwk py st w/ d grey margins (<2mm, >20/m, 10-50°tca) comn parallel cleav fab that Xcuts and offsets carb vns. Py env on carb/qtz vns. Unkn black min in carb vns.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
53.48	57.37	Vpy	±carb	5	VQCarb	±py	10							Sht/stk py str w/ dk grey margins (<2mm, >20/m, 10-50°tca) comn parallel cleav fab that Xcuts/offsets carb+Qtz veins. Qtz-Carb vns w/sulph halo, rotated by fabric aligned with Py stringers. Locally contain unkn cubic gloss black min.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
53.7	53.71	FOL	S	40
53.71	53.72		W	60
54.75	55		S	55

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	57.37	62.1	Siltstone - Calcarous	Bioturbated shales	Laminated limestone (~20°tca) with minor local bioturbation features. Common <3mm carbonate veins, 15 -35°tca, rare local carbonate cemented breccia with angular granule to pebble- sized clasts. Strong disseminated pyrite. Py ~4%

DataSet: ORO_GF

Hole ID: ORO13-01

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
57.37	62.1	Py	3	DIS										Abundant bedding parallel disseminated pyrite. Py ~3%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
57.37	57.38	BED	S	45
57.62	57.63			
59.4	59.41			30
59.45	59.6	FLT		20
60	60.01	BED		
60.9	61	FLT		25
61.57	61.58	BED		10

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	62.1	64.2	Mudstone - Calcareous	Limestone - nonspecific	Laminated limestone (~20°tca) with minor local bioturbation features. Common <3mm carbonate veins, 15 -35°tca, rare local carbonate cemented breccia with angular granule to pebble- sized clasts. Strong disseminated pyrite. Py ~4%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
62.1	64.2	Py	4	DIS										Strong disseminated pyrite. Py ~4%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
57.37	64.2	Vcarb	n/a	1										

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
62.34	62.35	BED	S	20

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	64.2	68.23	Black Shale	Vein	Quartz-Carbonate veins in black shale Interval dominated by < 6cm thick vuggy carbonate+quartz vein network oriented ~ 50°tca. Veins have fluidic margins. Common disseminated pyrite in black carbonaceous shale wallrock. Py~ 2%

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Signed: ______________

DataSet: ORO_GF

Hole ID: ORO13-01

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
64.2	68.23	Py	2	DIS										Common disseminated pyrite in black carbonaceous shale wallrock. Py~ 2%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
64.2	68.23	VQCarb	n/a											Interval dominated by < 6cm thick vuggy carbonate+quartz vein network oriented ~ 50°tca. Veins have fluidic margins. Common disseminated pyrite in black carbonaceous shale wallrock.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
67.05	67.08	FLT	S	20

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	68.23	75	Black Shale	undifferentiated shale	Black carbonaceous wkly lam shale. Glossy polished graphitic cleav/frac surf ~20 to 40°tca. Comn shears. Wispy thin carb vns, wk Hcl reaction in wallrock. Rare Py nod, elongate to cl fab <3cmX1cm. Local wkly dis py.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
68.23	75	Py	1	MASS										Rare pyrite nodules, elongate to cleavage fabric <3cm long, <1cm thick. Local weakly disseminated pyrite. Py~ 1%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
68.23	75	Vcarb	±qtz	3										Common wispy carbonate veins, but very weak reaction to Hcl in wallrock.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
68.5	68.51	FOL	S	30
69.35	69.36			40
73.24	73.25			

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	75	87.55	Black Shale	undifferentiated shale	Carbonaceous black shale. Incr carbonate,S Hcl reaction. Well dev thin lam trunc by shearing. Gloss graphite cl/frac surface ~20-40°tca. Comn lenticular py nod, elongate to bg fabric ~30-50°tca. Local fg dis Py.

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DataSet: ORO_GF

Hole ID: ORO13-01

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
75	87.55	Py	3	MASS										Common lenticular pyrite nodules, elongate parallel to bedding fabric ~ 30 - 50° tca. Local very fine grained disseminated pyrite. Py ~3%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
75	87.55	Vcarb	n/a	5										Increased carbonate veins <1cm (commonly <3mm). Veins cross cut cleavage locally but are commonly truncated by shearing.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
75.1	75.2	FLT	S	35
75.6	75.75			
76.5	76.51	FOL		50
76.9	77	FLT		20
78.74	78.75	BED		70
81.45	81.46			60
81.54	81.56	SSF		
84.63	84.7	FLT	S	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	87.55	115.27	Black Shale	undifferentiated shale	Carbonaceous graphitic black shale. Abun Carb; S Hcl reaction. Bg obsc by common shears. Comn graphitic gouge+rubble. Carb vns 1mm-5cm trunc by shears. Local carb-cmnt shale brx, Local monmict clast supt tect brx, fabr ~30°tca. Rare Py nod, rare dis py.

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DataSet: ORO_GF

Hole ID: ORO13-01

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
87.55	115.27	Py	1	DIS										Rare pyrite nodules, local very fine grained weakly disseminated pyrite. Py ~1%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
87.55	115.27	Vcarb	n/a	10										Common carbonate veins, up to 5cm but commonly <3mm, truncated by shearing. Local fault related (?) zones of carbonate cemented shale breccia.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
89.2	89.32	FLTG	VS	
89.32	89.8	FLTBX	S	
94	96.3	RUB		
96.46	96.47	FOL		70
97.66	97.75	FLT	S	50
98.19	98.74	FLTBX		40
98.74	104	RUB		
104.54	107.59	FLTBX		
109	112.7	RUB	S	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	115.27	123.49	Fault Gouge	Fault gouge (UTG)	Zone dominated by sandy carbonaceous fault gouge and graphitic rubble. Poor recovery; ~227cm of lost core.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
115.27	123.49	UnMin	0											

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
115.27	123.49	NoVeins	n/an/a											

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
115.27	123.49	FLTG	VS	

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	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	123.49	155.75	Black Shale	undifferentiated shale	Thin lam carb-rich shale. Mud-sized, bg defined by sand-size carb horizns ~50-60°tca. Mod-S Hcl reaction th/out. Common graphitic frac and shear planes ori'd = to bg angle. Comn discont carb vns (±rare quartz). Rare lenticular massv Py nod elongate to bg

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
123.49	155.75	Py	1											Rare massive pyrite occurs as lenticular nodules elongate to bedding/cleavage. Py ~1%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
123.49	155.75	Vcarb	±qtz											Common discontinuous carbonate veins (±rare quartz) occurs both parallel to and cross cutting bedding.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
125.19	125.2	BED		45
125.2	125.21	FOL		
128.6	128.61	BED		40
128.61	128.62	FOL		
129.36	129.37	BED		55
129.37	129.38	FOL		
134.86	134.87	BED		50
134.87	134.88	FOL		
139	139.4	FLTG	VS	40
140.51	140.53	FLT	S	
148.25	148.26	BED		50
148.26	148.27	FOL		
149.38	149.4	FLT		35
149.8	149.81			30

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	155.75	191.41	Mudstone - Calcareous	undifferentiated shale	Thin lam carb-rich shale. bedding ~60°tca. Mod-S Hcl reactn th/out. Graphite+talc coat frac and shear planes ori'd = to bg angle. Comn discont cb vns as bx and extnsnl 90° to shears. Local gyp; trace ?Scorodite in flts. Mass py+carb bed 165.47-165.62.

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DataSet: **ORO_GF**

Hole ID: **ORO13-01**

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
155.75	191.41	Py	0.5	DIS										Talc and Scorodite (?) Found on fracture planes

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
155.75	191.41	Vcarb	n/a	1										Common discontinuous carbonate veins occur parallel to and cross cutting bedding. Sheeted carbonate vein sets <4cm long occur as extensional features normal to and within healed shears, and as local carbonate cemented breccia proximal to shearing.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
157.9	159.75	FLT	S	
165.47	165.62	BED		50
169.47	170	RUB		
176.85	176.86	FLT	M	30
179.3	179.31	BED		50
181.05	184	RUB	VS	
187.54	188	FLTG		25
190	190.01	BED		50
190.01	190.02	FOL		

DataSet: ORO_GF

Hole ID: ORO13-01

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
7.62	8.23	0.61	0.42	68.8525	0	0	mode	100	100	SFT		
8.23	9.14	0.91	0.66	72.5274	0	0	mode	100	100	SFT		
9.14	10.06	0.92	0.7	76.087	0	0	mode	100	100	SFT		
10.06	11.58	1.52	1.11	73.0263	0	0	mode	100	100	SFT		
11.58	11.89	0.31	0.05	16.1290	0	0	bad	100	100	SFT		
11.89	12.19	0.3	0.04	13.3334	0	0	bad	100	100	SFT		
12.19	13.11	0.92	0.16	17.3913	0	0	bad	100	100	SFT		
13.11	14.13	1.02	1.12	109.804	0	0	mode	100	100	SFT		
14.13	14.54	0.41	0.2	48.7805	0	0	bad	100	100	SFT		
14.54	16.15	1.61	0.22	13.6646	0	0	bad	100	100	SFT		
16.15	17.68	1.53	1.18	77.1242	0	0	mode	100	100	VWK		
17.68	19.2	1.52	1.03	67.7631	0	0	mode	100	100	VWK		
19.2	19.81	0.61	0.02	3.2787	0	0	bad	15	15	SFT		
19.81	21.336	1.53	0.79	51.7693	0	0	mode	100	100	VWK		
21.336	22.54	1.2	0.77	63.9535	0	0	bad	100	100	VWK		
22.54	23.77	1.23	0.68	55.2846	0	0	mode	100	100	VWK		
23.77	24.99	1.22	0.99	81.1476	0	0	mode	100	100	VWK		
24.99	26.52	1.53	1.13	73.8562	0	0	mode	100	100	VWK		
26.52	26.93	0.41	0.17	41.4634	0	0	bad	100	100	STR		
26.93	28.35	1.42	0.39	27.4648	0	0	mode	100	100	STR		
28.35	29.87	1.52	0.17	11.1842	0	0	mode	100	100	STR		
29.87	31.39	1.52	0.46	30.2632	0	0	mode	100	100	STR		
31.39	32.3	0.91	0.2	21.9780	0	0	mode	100	100	STR		
32.3	33.83	1.53	1.13	73.8561	0	0	mode	100	100	STR		
33.83	34.48	0.65	0.49	75.3849	0	0	sli	75	75	STR		
34.48	35.96	1.48	0.77	52.0270	0	0	sli	100	100	STR		
35.96	37.49	1.53	1.27	83.0064	0	0	sli	100	100	STR		
37.49	39.01	1.52	1.35	88.816	0	0	sli	100	100	STR		
39.01	40.53	1.52	0.86	56.5789	0	0	sli	100	100	STR		
40.53	42.67	2.14	0.66	30.8411	0	0	sli	100	100	STR		Driller's block to blcok goes from 133' to 140', when they are only using 7' rods??
42.67	43.43	0.76	0.24	31.5789	0	0	sli	100	100	VWK		
43.43	44.8	1.37	0.75	54.7446	0	0	sli	100	100	VWK		
44.8	46.63	1.83	0.75	40.9836	0	0	sli	100	100	STR		
46.63	48.15	1.52	1.03	67.7631	0	0	sli	100	100	STR		
48.15	49.68	1.53	0.95	62.0916	0	0	sli	100	100	STR		
49.68	51.2	1.52	0.94	61.8421	0	0	sli	100	100	STR		

GeoSpark Logger Print Logs ~ Geotechnical

Hole ID: **ORO13-01**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
51.2	52.73	1.53	0.39	25.4902	0	0	mode	100	100	VWK		
52.73	54.25	1.52	1.3	85.5263	0.48	31.58	sli	100	100	STR		
54.25	55.77	1.52	1.27	83.5526	0.34	22.37	sli	75	75	STR		
55.77	57.3	1.53	1.49	97.3857	0.25	16.34	sli	95	95	VSTR		
57.3	58.83	1.53	1.49	97.3855	0.1	6.54	sli	45	45	VSTR		
58.83	60.35	1.52	1.4	92.1055	0.49	32.24	sli	85	85	VSTR		
60.35	61.57	1.22	1.03	84.4261	0.16	13.11	sli	45	45	VSTR		
61.57	63.07	1.5	1.48	98.6667	0.1	6.67	sli	65	65	VSTR		
63.07	63.4	0.33	0.26	78.7874	0	0	sli	50	50	VSTR		
63.4	64.92	1.52	1.38	90.7897	0.35	23.03	sli	55	55	VSTR		
64.92	65.84	0.92	0.68	73.9132	0.11	11.96	sli	22	22	VSTR		starting to see rare graphite on fracture surfaces.
65.84	66.14	0.3	0.33	109.999	0	0	sli	45	45	VSTR		
66.14	67.67	1.53	1.2	78.4314	0.23	15.03	sli	70	70	VSTR		less than half the fracture surfaces have marginal graphite.
67.67	69.18	1.51	1.35	89.4039	0	0	sof	95	95	VSTR		Sof = abundant graphite on fracture surfaces.
69.18	70.71	1.53	1.52	99.3465	0.26	16.99	sof	65	65	STR		
70.71	72.24	1.53	1.51	98.6929	0.14	9.15	sof	75	75	STR		
72.24	72.85	0.61	0.43	70.4917	0	0	sof	30	30	STR		
72.85	74.07	1.22	1.12	91.8032	0.16	13.11	sof	35	35	STR		
74.07	75.59	1.52	0.96	63.1580	0	0	sof	100	100	STR		
75.59	77.11	1.52	1.13	74.3419	0	0	sof	100	100	VWK		
77.11	78.33	1.22	0.92	75.4098	0	0	sof	100	100	VWK		
78.33	79.86	1.53	1.45	94.7713	0.5	32.68	sof	24	24	STR		
79.86	80.77	0.91	0.81	89.0114	0	0	sof	55	55	VWK		
80.77	82.3	1.53	1.4	91.5029	0.28	18.3	sof	43	43	STR		
82.3	83.21	0.91	0.56	61.5387	0	0	sof	40	40	STR		
83.21	84.73	1.52	1.24	81.5787	0.11	7.24	sof	100	100	STR		
84.73	86.26	1.53	1.4	91.5033	0.59	38.56	sof	36	36	STR		
86.26	87.78	1.52	1.48	97.3686	0.37	24.34	sof	70	70	STR		graphite on fracture surfaces appears reduced compared to previous intervals.
87.78	89.31	1.53	1.23	80.3922	0.17	11.11	sof	55	55	STR		
89.31	90.83	1.52	1.44	94.7366	0.28	18.42	sof	95	95	STR		
90.83	92.35	1.52	1.29	84.8686	0.34	22.37	sof	63	63	STR		
92.35	93.88	1.53	1.3	84.9674	0.34	22.22	sof	68	68	STR		
93.88	95.1	1.22	0.78	63.9344	0	0	sof	100	100	STR		
95.1	95.71	0.61	0.55	90.1638	0	0	sof	100	100	VWK		
95.71	97.23	1.52	1.48	97.3682	0.13	8.55	sof	100	100	STR		
97.23	98.45	1.22	0.99	81.148	0.51	41.8	sof	60	60	STR		
98.45	99.97	1.52	1.14	74.9998	0.11	7.24	sof	100	100	STR		

GeoSpark Logger Print Logs ~ Geotechnical

Hole ID: **ORO13-01**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
99.97	100.89	0.92	0.81	88.0437	0	0	sof	100	100	STR		
100.89	101.49	0.6	0.55	91.6669	0	0	sof	100	100	VWK		
101.49	103.03	1.54	1.48	96.1038	0	0	sof	100	100	STR		
103.03	104.54	1.51	1.21	80.1323	0	0	sof	100	100	STR		
104.54	106.07	1.53	1.23	80.3922	0.21	13.73	sof	45	45	STR		
106.07	107.59	1.52	1.47	96.7107	0.57	37.5	sof	24	24	STR		
107.59	109.11	1.52	1.34	88.1577	0	0	sof	90	90	STR		
109.11	110.64	1.53	0.3	19.6079	0	0	sof	65	65	VWK		
110.64	112.47	1.83	1.45	79.2349	0	0	sof	100	100	STR		
112.47	113.69	1.22	1.17	95.9015	0	0	sof	100	100	STR		
113.69	115.27	1.58	1.11	70.2534	0	0	sof	100	100	STR		
115.27	116.43	1.16	0.1	8.62066	0	0	sof	50	50	VWK		
116.43	117.95	1.52	0.09	5.92107	0	0	sof	40	40	VWK		
117.95	119.78	1.83	0.15	8.19671	0	0	sof	45	45	VWK		
119.78	121.31	1.53	0.08	5.22876	0	0	sof	55	55	VWK		
121.31	122.83	1.52	0.18	11.8421	0	0	sof	100	100	VWK		
122.83	124.35	1.52	1.07	70.3949	0	0	sof	100	100	VWK		
124.35	125.88	1.53	1.08	70.5883	0	0	sof	57	57	STR		
125.88	127.4	1.52	1.49	98.0261	0.29	19.08	sof	36	36	STR		
127.4	128.93	1.53	1.33	86.9286	0	0	sof	34	34	STR		
128.93	130.45	1.52	1.5	98.6839	0.12	7.89	sof	95	95	STR		
130.45	131.97	1.52	1.08	71.0524	0	0	sof	90	90	STR		
131.97	133.19	1.22	1.16	95.0819	0	0	sof	100	100	STR		
133.19	134.72	1.53	1.25	81.6994	0	0	sof	100	100	STR		
134.72	136.24	1.52	1.28	84.2103	0.12	7.89	sof	67	67	STR		
136.24	137.77	1.53	1.42	92.8105	0.36	23.53	sof	38	38	STR		
137.77	139.29	1.52	1.14	75.0005	0	0	sof	100	100	STR		
139.29	140.51	1.22	1.02	83.6065	0.34	27.87	sof	100	100	STR		
140.51	141.72	1.21	1.1	90.9086	0.1	8.26	sof	83	83	STR		
141.72	142.64	0.92	0.57	61.9566	0	0	sof	100	100	STR		
142.64	143.87	1.23	1.14	92.6833	0	0	sof	89	89	STR		
143.87	144.48	0.61	0.62	101.639	0	0	sof	100	100	STR		
144.48	145.7	1.22	0.82	67.2130	0	0	sof	100	100	STR		
145.7	146.61	0.91	0.88	96.7029	0.14	15.38	sof	100	100	STR		
146.61	147.52	0.91	0.75	82.4173	0	0	sof	71	71	STR		
147.52	149.05	1.53	1.37	89.5426	0.26	16.99	sof	77	77	STR		
149.05	150.26	1.21	1.05	86.7775	0	0	sof	100	100	STR		
150.26	151.18	0.92	0.86	93.4785	0	0	sof	54	54	STR		
151.18	152.7	1.52	1.32	86.8419	0.16	10.53	sof	95	95	STR		

Hole ID: **ORO13-01**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
152.7	154.23	1.53	1.45	94.7713	0.17	11.11	sof	59	59	STR		
154.23	155.75	1.52	1.39	91.4471	0.44	28.95	sof	35	35	STR		
155.75	157.9	2.15	1.19	55.349	0	0	sof	100	100	STR		
157.9	160.93	3.03	0.57	18.8119	0	0	sof	100	100	STR		
160.93	161.54	0.61	0.13	21.3115	0	0	sof	25	25	STR		
161.54	163.98	2.44	1.57	64.3442	0.33	13.52	sof	63	63	STR		
163.98	167.03	3.05	2.91	95.4097	1.17	38.36	sli	44	44	STR		Gradational shift from graphite rich fracture surfaces, to more sparse graphite fracture coating, and an increased presence of rare hard mineral coatings and more common white vfg mineral coatings (kaolinite?)
167.03	169.47	2.44	1.82	74.5901	0.57	23.36	sli	51	51	STR		
169.47	171.6	2.13	1.74	81.69	0	0	sli	100	100	STR		
171.6	173.43	1.83	1.3	71.0388	0.46	25.14	sli	67	67	STR		
173.43	175.56	2.13	1.63	76.5257	0.26	12.21	sli	75	75	STR		
175.56	176.78	1.22	0.99	81.1475	0.2	16.39	sli	32	32	STR		
176.78	178.61	1.83	1.53	83.6065	0.35	19.13	sli	100	100	STR		
178.61	181.05	2.44	2.13	87.295	0.25	10.25	sli	100	100	STR		
181.05	182.27	1.22	0.44	36.0655	0	0	sli	100	100	STR		
182.27	185.31	3.04	1.27	41.7764	0	0	sli	100	100	STR		
185.31	186.53	1.22	0.82	67.2130	0	0	sli	100	100	STR		
186.53	188.36	1.83	1.49	81.4207	0.24	13.11	sli	100	100	STR		
188.36	191.41	3.05	3.04	99.6720	1.75	57.38	sli	24	24	VSTR		EOH

GeoSpark Logger Print Logs ~ Mag Susceptibility

DataSet: ORO_GF

Hole ID: ORO13-01

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
7.62	10	2.38	0.03	0.041	0.154	0.075				
10	12	2	0.046	0.03	0.034	0.037		Svan	25/07/2013	
12	14	2	0.098	0.074		0.086		Svan	25/07/2013	
14	16.25	2.25	0.034	0	0.033	0.022		Svan	25/07/2013	
16.25	18	1.75	0.012	0.034	0.008	0.018		Svan	25/07/2013	
18	19.2	1.2	0.012	0.1	0.127	0.08		Svan	25/07/2013	
19.2	21	1.8	0.358	0.09	0.044	0.164		Svan	25/07/2013	
21	23	2	0.009	0.204	0.026	0.08		Svan	25/07/2013	
23	25	2	0.025	0.036	0.073	0.045		Svan	25/07/2013	
25	26.5	1.5	0.005	0.105	0	0.037		Svan	25/07/2013	
26.5	29.87	3.37	0.063	0.022	0.168	0.084		Svan	25/07/2013	
29.87	33	3.13	0.035	0	0.117	0.051		Svan	25/07/2013	
33	35	2	0.004	0.011	0.059	0.025		Svan	25/07/2013	
35	37	2	0.003	0.201	0.05	0.085		Svan	25/07/2013	
37	39	2	0.003	0.009	0.016	0.009		Svan	25/07/2013	
39	41	2	0.009	0.122	0	0.044		Svan	25/07/2013	
41	43	2	0.46	0.152	0.206	0.273		Svan	25/07/2013	
43	45	2	0.072	0.172	0.2	0.148		Svan	25/07/2013	
45	47	2	0.004	0.069	0.127	0.067		Svan	25/07/2013	
47	49	2	0.094	0.232		0.163		Svan	25/07/2013	
49	51	2	0	0.111	0.019	0.043		Svan	25/07/2013	
51	53.48	2.48	0.014	0.318	0.109	0.147		Svan	25/07/2013	
53.48	55	1.52	0.143	0.24	0.046	0.143	SI	Svan	26/07/2013	
55	56	1	0.341	0.144	0.05	0.178		Svan	26/07/2013	
56	57.37	1.37	0.236	0.568	0.098	0.301		Svan	26/07/2013	
57.37	59	1.63	0.013	0.06	0.024	0.032		Svan	26/07/2013	
59	61	2	0.063	0.028	0	0.03		Svan	26/07/2013	
61	62.1	1.1	0.002	0	0.006	0.003		Svan	26/07/2013	
62.1	63	0.9	0.222	0.013	0.102	0.112		Svan	26/07/2013	
63	64.2	1.2	0.079	0.058	0.063	0.067		Svan	26/07/2013	
64.2	66	1.8	0.048	0	0	0.016		Svan	26/07/2013	
66	68.23	2.23	0.232	0.022	0.029	0.094		Svan	26/07/2013	
68.23	70	1.77	0	0.026	0	0.009		Svan	26/07/2013	
70	72	2	0.588	0.111	0	0.233		Svan	26/07/2013	
72	74	2	0	0	0.2	0.067		Svan	26/07/2013	
74	75	1	0.007	0	0.004	0.004		Svan	26/07/2013	
75	77	2	0.053	0.081	0	0.045		Svan	26/07/2013	

Hole ID: **ORO13-01**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
77	79	2	0	0.002	0	0.001		Svan	26/07/2013	
79	81	2	0.123	0.014	0.057	0.065		Svan	26/07/2013	
81	83	2	0.002	0	0.239	0.08		Svan	26/07/2013	
83	85	2	0.117	0	0.012	0.043		Svan	26/07/2013	
85	86	1	0	0.172	0.001	0.058		Svan	26/07/2013	
86	87.55	1.55	0.058	0.02	0.146	0.075		Svan	26/07/2013	
87.55	89	1.45	0	0	0.228	0.076		Svan	26/07/2013	
89	91	2	0	0	0	0		Svan	26/07/2013	
91	93	2	0.062	0	0.067	0.043		Svan	26/07/2013	
93	95	2	0	0.036	0	0.012		Svan	26/07/2013	
95	97	2	0.003	0.026	0.034	0.021		Svan	26/07/2013	
97	99	2	0.033	0	0.004	0.012		Svan	26/07/2013	
99	101	2	0.041	0.052	0	0.031		Svan	26/07/2013	
101	103	2	0.021	0.023	0.005	0.016		Svan	26/07/2013	
103	105	2	0.007	0.083	0.045	0.045		Svan	26/07/2013	
105	107	2	0.032	0.008	0.041	0.027		Svan	26/07/2013	
107	109	2	0.094	0.009	0.016	0.04		Svan	26/07/2013	
109	111	2	0.098	0.061	0.004	0.054		Svan	26/07/2013	
111	113	2	0.005	0	0	0.002		Svan	27/07/2013	
113	115.27	2.27	0.038	0.043	0.274	0.118		Svan	27/07/2013	
115.27	123.49	8.22	0.02	0.14	0.063	0.074		Svan	27/07/2013	
123.49	125	1.51	0	0	0	0		Svan	27/07/2013	
125	127	2	0.007	0	0.021	0.009		Svan	27/07/2013	
127	129	2	0	0.012	0	0.004		Svan	27/07/2013	
129	131	2	0	0.001	0.032	0.011		Svan	27/07/2013	
131	133	2	0	0.055	0	0.018		Svan	27/07/2013	
133	135	2	-0.016	-0.085	0.044	-0.019		Svan	27/07/2013	
135	137	2	-0.226	0.05	0.004	-0.057		Svan	27/07/2013	
137	139	2	0.002	0	-0.012	-0.003		Svan	27/07/2013	
139	141	2	-0.012	0	0	-0.004		Svan	27/07/2013	
141	143	2	0.124	0.058	0.021	0.068		Svan	27/07/2013	
143	145	2	0	0.023	0	0.008		Svan	27/07/2013	
145	147	2	0	-0.053	-0.01	-0.021		Svan	27/07/2013	
147	149	2	0	-0.016	0.059	0.014		Svan	27/07/2013	
149	151	2	0.043	0.009	0.019	0.024		Svan	27/07/2013	
151	153	2	0.021	0.048	0.02	0.03		Svan	27/07/2013	
153	154	1	0.177	0.079	0.059	0.105		Svan	27/07/2013	
154	155.75	1.75	0	0.216	-0.073	0.048		Svan	27/07/2013	
155.75	159	3.25	0.005	0.566	0.031	0.201		Svan	28/07/2013	

Hole ID: **ORO13-01**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
159	162	3	0.481	0.02	0	0.167		Svan	28/07/2013	
162	164	2	0.047	0.023	0	0.023		Svan	28/07/2013	
164	166	2	0	-0.009	-0.03	-0.013		Svan	28/07/2013	
166	168	2	0.096	0.148	0.417	0.22		Svan	28/07/2013	
168	170	2	0.012	-0.049	0.168	0.044		Svan	28/07/2013	
170	172	2	0.229	0.021	0.053	0.101		Svan	28/07/2013	
172	174	2	0.248	0.003	0	0.084		Svan	28/07/2013	
174	176	2	0.004	0.046	0.049	0.033		Svan	28/07/2013	
176	178	2	0.015	0.012	0.009	0.012		Svan	28/07/2013	
178	180	2	0.327	0.279	0.06	0.222		Svan	28/07/2013	
180	182	2	0	0.44	0	0.147		Svan	28/07/2013	
182	184	2	0.003	0.23	0.076	0.103		Svan	28/07/2013	
184	186	2	0.539	0	0.204	0.248		Svan	28/07/2013	
186	188	2	0.007	0.151	0.798	0.319		Svan	28/07/2013	
188	190	2	-0.038	0.091	0.211	0.088		Svan	28/07/2013	
190	191.41	1.41	0.354	-0.003	-0.007	0.115		Svan	28/07/2013	

GeoSpark Logger Print Logs ~ DH Samples

DataSet: ORO_GF

Hole ID: ORO13-01

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
7.62	10	Q186001	HC	Svan	☐	
10	12	Q186002	HC	Svan	☐	
12	14	Q186003	HC	Svan	☐	
14	16.25	Q186004	HC	Svan	☐	
16.25	18	Q186005	HC	Svan	☐	
18	19.2	Q186006	HC	Svan	☑	
19.2	21	Q186007	HC	Svan	☐	
21	23	Q186008	HC	Svan	☐	
23	25	Q186009	HC	Svan	☐	
25	26.5	Q186011	HC	Svan	☐	
26.5	29.87	Q186012	HC	Svan	☐	
29.87	33	Q186013	HC	Svan	☐	
33	35	Q186014	HC	Svan	☐	
35	37	Q186015	HC	Svan	☐	
37	39	Q186016	HC	Svan	☐	
39	41	Q186017	HC	Svan	☐	
41	43	Q186018	HC	Svan	☐	
43	45	Q186019	HC	Svan	☐	
45	47	Q186021	HC	Svan	☐	
47	49	Q186022	HC	Svan	☐	
49	51	Q186023	HC	Svan	☐	
51	53.48	Q186024	HC	Svan	☑	
53.48	55	Q186026	HC	Svan	☐	
55	56	Q186027	HC	Svan	☐	
56	57.37	Q186028	HC	Svan	☐	
57.37	59	Q186029	HC	Svan	☐	
59	61	Q186031	HC	Svan	☐	
61	62.1	Q186032	HC	Svan	☐	
62.1	63	Q186033	HC	Svan	☐	
63	64.2	Q186034	HC	Svan	☐	
64.2	66	Q186035	HC	Svan	☐	
66	68.23	Q186036	HC	Svan	☐	
68.23	70	Q186037	HC	Svan	☐	
70	72	Q186038	HC	Svan	☐	
72	74	Q186039	HC	Svan	☐	
74	75	Q186041	HC	Svan	☐	
75	77	Q186042	HC	Svan	☑	

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-01**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
77	79	Q186043	HC	Svan	☐	
79	81	Q186044	HC	Svan	☐	
81	83	Q186045	HC	Svan	☐	
83	85	Q186046	HC	Svan	☐	
85	86	Q186047	HC	Svan	☐	
86	87.55	Q186048	HC	Svan	☐	
87.55	89	Q186049	HC	Svan	☐	
89	91	Q186051	HC	Svan	☑	
91	93	Q186053	HC	Svan	☐	
93	95	Q186054	HC	Svan	☐	
95	97	Q186055	HC	Svan	☐	
97	99	Q186056	HC	Svan	☐	
99	101	Q186057	HC	Svan	☐	
101	103	Q186058	HC	Svan	☐	
103	105	Q186059	HC	Svan	☐	
105	107	Q186061	HC	Svan	☐	
107	109	Q186062	HC	Svan	☑	
109	111	Q186063	HC	Svan	☐	
111	113	Q186064	HC	Svan	☐	
113	115.27	Q186065	HC	Svan	☐	
115.27	123.49	Q186066	HC	Svan	☐	
123.49	125	Q186067	HC	Svan	☐	
125	127	Q186068	HC	Svan	☐	
127	129	Q186069	HC	Svan	☐	
129	131	Q186071	HC	Svan	☐	
131	133	Q186072	HC	Svan	☐	
133	135	Q186073	HC	Svan	☐	
135	137	Q186074	HC	Svan	☐	
137	139	Q186075	HC	Svan	☐	
139	141	Q186076	HC	Svan	☐	
141	143	Q186077	HC	Svan	☐	
143	145	Q186078	HC	Svan	☑	
145	147	Q186079	HC	Svan	☐	
147	149	Q186081	HC	Svan	☐	
149	151	Q186082	HC	Svan	☐	
151	153	Q186083	HC	Svan	☐	
153	154	Q186084	HC	Svan	☐	
154	155.75	Q186085	HC	Svan	☐	
155.75	159	Q186086	HC	Svan	☐	

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-01**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
159	162	Q186087	HC	Svan	☐	
162	164	Q186088	HC	Svan	☐	
164	166	Q186089	HC	Svan	☐	
166	168	Q186091	HC	Svan	☐	
168	170	Q186092	HC	Svan	☐	
170	172	Q186093	HC	Svan	☐	
172	174	Q186094	HC	Svan	☑	
174	176	Q186095	HC	Svan	☐	
176	178	Q186096	HC	Svan	☐	
178	180	Q186097	HC	Svan	☐	
180	182	Q186098	HC	Svan	☐	
182	184	Q186099	HC	Svan	☐	
184	186	Q186101	HC	Svan	☐	
186	188	Q186102	HC	Svan	☑	
188	190	Q186104	HC	Svan	☐	
190	191.41	Q186105	HC	Svan	☐	EOH

GeoSpark Logger Print Logs ~ Duplicate Samples

DataSet: ORO_GF

Hole ID: ORO13-01

From (m)	To (m)	Sample ID	Original Sample ID	QC Category	Comments
18	19.2	Ch:Q186006	Q186006	LABCHCK	
51	53.48	Q186025	Q186024	FD	
75	77	Ch:Q186042	Q186042	LABCHCK	
89	91	Q186052	Q186051	FD	
107	109	Ch:Q186062	Q186062	LABCHCK	
143	145	Ch:Q186078	Q186078	LABCHCK	
172	174	Ch:Q186094	Q186094	LABCHCK	
186	188	Q186103	Q186102	FD	

GeoSpark Logger Print Logs ~ Standards / Blanks

DataSet: ORO_GF

Hole ID: ORO13-01

Sample ID	Standard ID	Comments
Q186010	FB	
Q186020	CDN-GS-5L	
Q186030	FB	
Q186040	CDN-GS-5L	
Q186050	FB	
Q186060	CDN-GS-5L	
Q186070	FB	
Q186080	CDN-GS-5L	
Q186090	FB	
Q186100	CDN-GS-5L	

Gold Fields Selwyn – Quicklog 2012

<table>
<tr><td>Hole no: ORO13-02
Logged By: Tim Stubley</td><td>Az: 045</td><td>Dip:
-50</td><td>Target depth:
200m</td><td colspan="2">EOH: 34 m</td></tr>
<tr><td>Start date: 27/07/2013</td><td>End date:
28/07/2013</td><td>Pad:
ORO13-O</td><td>E:
401456</td><td>N:
7020191</td><td>Elevation:
1550 m</td></tr>
<tr><td colspan="4">Target: ORO13-02 targets the potential intersection of three structural zones identified by surface mapping, historic drilling and geophysical surveys. In addition, this hole will also test the potential intersection with a permissive limestone unit identified in surface mapping, and is located proximal to a strong geochemical anomaly.</td><td colspan="2">Target explained? Hole abandoned at 34 m</td></tr>
<tr><td colspan="6">Summary:
Location: ORO13-02 is situated on proposed pad ORO13-O, which B88-11 and B88-12 were drilled from and is located approximately 100 m northeast of the center of the Main Zone.
Lithology: Did not drill through overburden
Alteration: n/a
Mineralization: n/a
Interpretation/Comments:</td></tr>
</table>

Shift	**From**	**To**	**Comments**
July 27/13	**0**	**34m**	**Overburden** Angular to rounded fragments, cobbles, pebbles and sand consisting of black carbonaceous shale, limestone and quart-feldspar porphyry. Cased to 6.8m then commenced coring overburden duration of nightshift. Dayshift driller pushed casing to ~26m, then drilled down to ~ 34m and could go no further. Geologist attended drill and confirmed drillers still coring overburden. Hole was shut down, casing pulled and drill re-set to -74°. Second attempt hole ID is ORO13-03.

DataSet: **ORO_GF**

Depth (m)	Hole Type	Core Diamete	Grid ID	East	North	Elevation	Survey Method	Survey Date	Survey By	Date Started	Date Completed	Logged By	Prospect	Validated By

Hole: ORO13-02

Depth (m)	Hole Type	Core Diamete	Grid ID	East	North	Elevation	Survey Method	Survey Date	Survey By	Date Started	Date Completed	Logged By	Prospect	Validated By
34 m	DD	HQ	UTM09N_NAD83	401456	7020191	1550	GPS	26/07/2013	RC	27/07/2013	28/07/2013	TimS	Main Zone	TimS

Hole failed. Casing not set in bedrock, drillers started coring ovb. Couldn't push deeper than 34m. Re-planned to drill at -75 (new ID ORO13-03).

GeoSpark Logger Print Logs ~ DH Surveys

DataSet: **ORO_GF**

Hole ID: **ORO13-02**

Depth (m)	Survey Method	Grid ID	Dip	Surv. Tool Azimuth	Magnetic Declination	Corrected Azimuth	Magnetics	Date Surveyed	Survey Instrument	Bad Reading	Comments
0	COLL	UTM09N_NAD83	-50	45	0	45		27/07/2013	CMP	☐	

Gold Fields Canada

Signed: ______________

DataSet:

Hole ID:

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO					

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

Gold Fields Selwyn – ORO13-03 Quicklog 2012

<table>
<tr><td>Hole no: ORO13-03
Logged By: SVan</td><td>Az: 045°</td><td>Dip: -75°</td><td>Target depth:
200 m</td><td colspan="2">EOH: 267.00 m</td></tr>
<tr><td>Start date:
28/07/2013</td><td>End date:
31/07/2013</td><td>Pad:
ORO13-O</td><td>E:
401456</td><td>N:
7020191</td><td>Elevation:
1550 m</td></tr>
<tr><td colspan="3">Target: ORO13-03 targets the potential intersection of three structural zones identified by surface mapping, historic drilling and geophysical surveys. In addition, this hole will also test the potential intersection with a permissive limestone unit identified in surface mapping, and is located proximal to a strong geochemical anomaly.</td><td colspan="3">Target explained: ORO13-03 successfully intercepted a significant fault zone at depth with proximal arsenopyrite mineralization. Primary pyrite was observed throughout the hole, but pyrite veinlets and discrete textures observed in the cherty interbeds represent a possible secondary remobilization.</td></tr>
<tr><td colspan="6">Summary:
Location: ORO13-03 is situated on proposed pad ORO13-O, which ORO13-02, B88-11 and B88-12 were drilled from and is located approximately 100 m northeast of the center of the Main Zone.
Lithology: 10.36 m of overburden overlies highly weathered and decomposed undifferentiated shale and weakly weathered shale-argillite-siltstone to a depth of 34.00m. From 34.00 to the end of the hole at 267.00 m, variably silicified shale with laminations and very thin bedding with meter scale interbeds of chert displaying abundant quartz-carbonate veining and structurally controlled (or utilized) contacts was intersected; with the exception of a significant fault zone from 91.24 to 96.20 m.
Alteration: The dominant alteration observed in ORO13-03 was comprised of clay and minor FeOx-Lim/Goe with trace talc and graphite on fracture surfaces and along cleavage traces.
Mineralization: Arsenopyrite was observed from 85.39-91.24 m within pyrite-arsenopyrite veinlets displaying diffuse margins. Pyrite was observed throughout the hole, as fine-grained disseminations, very thin beds, lenses and elongate nodules that parallel bedding, as well as rare larger nodules which cross-cut bedding. The relationship (or lack thereof) between the massive, aggregated fine-grained disseminated pyrite within the cherty interbeds and the high density quartz-carbonate (potentially trace FeCarb) veins remains enigmatic.
Interpretation/Comments: ORO13-03 successfully intercepted a significant fault zone at depth with proximal arsenopyrite-pyrite mineralization. No permissive limestone lithology was intersected. Primary pyrite was observed throughout the hole, but pyrite veinlets and discrete textures observed in the cherty interbeds represent a possible secondary remobilization.</td></tr>
</table>

Shift	**From**	**To**	**Comments**
July 28, 2013 **0.00 m - 35.17 m**	**0.00**	**10.36**	**Overburden (OB)**
	10.36	**25.60**	**Undifferentiated Shale (ShU)** Black, very soft (can be dented with fingertip), highly weathered undifferentiated shale. Core is comprised of broken and blocky fragments (very friable) typically less than 3 cm suspended in abundant clay, sand and grit. Bedding indistinguishable, but apparent cleavage ~ 50-70° TCA. No visible sulphides.
	25.60	**34.00**	**Shale, Argillite, Siltstone (ShArSi)** Broken and blocky, with minor rubble zones and discrete competent core <20 cm. Dark grey siltstone with discrete, thinly bedded (1-5 mm) dark grey to black mudstone-argillite layers with small pyrite

			nodules (< 1cm) that cross-cut bedding and thin pyrite horizons (< 7 mm) oriented parallel to bedding ~45° TCA. Sparse disseminated pyrite. Weak cleavages are identified parallel to bedding, and cross-cutting bedding at ~60° TCA. Common scorodite on fracture surfaces. Rare FeOx staining on fracture surfaces. **~2 % Pyrite**
July 29, 2013 **35.77 m - 104.53 m**	**34.00**	**47.45**	**Siliceous Shale (ShS)** Broken and blocky, with minor rubble zones and discrete competent core intervals < 10 cm. Increase in rubble and small sand-sized, gritty core recovery towards lower end of interval. Dark grey to black, thinly bedded shale displaying discrete variably siliceous intervals with pyrite nodules (<1 cm) that cross-cut bedding in addition to small pyrite lenses (<3 cm x 0.3 cm) and abundant thin pyrite horizons (<5 mm) oriented parallel to bedding (~40° TCA). Sparse disseminated fine-grained pyrite. Weak cleavages are identified parallel to bedding, and cross-cutting bedding at ~65° TCA. Common scorodite on fracture surfaces. Very rare FeOx staining on fracture surfaces. Very rare quartz veins < 2 mm are observed parallel to and cross-cutting bedding. **~3% Pyrite**
	47.45	**49.14**	**Siliceous Shale with thin Calcareous Mudstone Interbeds (ShsS/MdstCal)** Broken and blocky core with minor rubble and locally competent core recovery (<20 cm). Unit is characterized by dark grey to black shale with 2 to 4 cm interbeds of medium grey to buff-grey calcareous mudstone (reacts weakly with HCl) displaying FeOx staining in bedding and along cross-cutting fractures and rare siliceous lenses < 4 cm). Thin horizons of pyrite and thin pyrite lenses are observed parallel to bedding (~50° TCA). Trace disseminated pyrite in shale, with more abundant disseminated pyrite observed in calcareous interbeds. Several small quartz veins < 3 mm, with irregular margins and FeOx staining are observed. Weak cleavage is observed both parallel to bedding, with minor discordant fractures orthogonal to bedding and as a weak fracture fabric sub-parallel TCA (~5-15° TCA). Very rare scorodite (?) is observed on two fracture surfaces. **4% Pyrite.**
	49.14	**81.89**	**Siliceous Shale (ShS)** Relatively competent core with discrete rubble zone intervals and broken and blocky core. Dark grey to black siliceous shale containing rare silica/cherty lenses (<6 cm) and pyrite that is distributed as thin pyrite horizons (<1.25 cm) and small pyrite lenses (<3 cm) oriented parallel to bedding (30-40° TCA). In addition, pyrite is observed as wispy disseminated horizons and large irregular shaped nodules (<7 cm) that occur both parallel to and cross-cut bedding. Sparse disseminated fine-grained pyrite throughout unit. Common quartz veins (1-8 mm thick) with fragments of wall rock included are observed mainly parallel to bedding, but they also cross cut bedding

			(and both pyrite nodules, lenses and horizons). Uncommon scorodite is observed on fracture surfaces along with very rare FeOx. Weak cleavage is observed both parallel to bedding, with minor discordant fractures orthogonal to bedding and as a weak fracture fabric sub-parallel TCA (~5-15° TCA). **7% Py**rite
	81.89	**85.39**	**Siliceous shale with abundant quartz-carbonate vein and breccia (ShS/HBX)** Broken and blocky core with abundant rubble at the top of the interval. Light to medium grey siliceous shale with thinly bedded pyrite ~45-40 TCA that is partially to completely obscured by degree of fracture and quartz-carbonate vein and hydrothermal breccia overprint. Breccia is typified by jigsaw fit to chaotic organization which is variably quartz-carbonate ± iron carbonate ± clay matrix supported. Thin pyrite horizons and rare small pyrite lenses (<1 X 0.2 cm) oriented parallel to bedding (~45° TCA), discrete wispy lineations of disseminated pyrite cross-cut bedding. Rare disseminated fine-grained pyrite. Single centerline occurrence of an unidentified black, glossy to sub-metallic in luster mineral within quartz carbonate vein which appears contemporaneous with breccia. Common soft, orange-brown clay, FeOx and rare lim/goe on fracture surfaces. **2% Pyrite**
	85.39	**91.24**	**Siliceous Shale (ShS)** Relatively competent core with discrete rubble zone intervals and broken, blocky core. Dark grey to black, thinly, variably siliceous, bedded shale (30-40° TCA) containing several large (<25 cm) bedding concordant intervals of massive pyrite with lesser arsenopyrite (87.70-87.95 m; 90.27-90.35 m; 92.99-91.24 m), abundant disseminated fine grained and aggregate masses of pyrite, rare bedding parallel pyrite lenses, pyrite on fracture surfaces and common very thin horizons of fine-grained pyrite. Several diffuse veinlets of pyrite-arsenopyrite at 87.70-87.95 m. Rare quartz ± carbonate ± FeOx veins (1-3 mm thick). Trace scorodite is observed on fracture surfaces along with common FeOx and lim/goe. Weak cleavage is observed both parallel to bedding with minor discordant fractures orthogonal to bedding and as a weak fracture fabric 50-65° TCA). **10% Pyrite, 1% Arsenopyrite**
	91.24	**96.20**	**Fault Zone (UT)** Very soft (indented by thumbnail) medium grey, relatively competent core with discrete intense rubble ± gouge zones, local weak cataclasite textures (strong tectonic fabric with chaotic organization). The rock generally looks very broken, blocky and highly fragmented to friable, but appears to have enough of a clay component to maintain a somewhat rigid appearance; upon the lightest of pressure, however, it falls apart. Sparse graphite on fracture surfaces (~20° TCA) Primary texture is partially to completely obscured, no bedding

			or foliation can be discerned with confidence. Common disseminated fine grained pyrite and rare aggregated masses partially aligned with local fracture fabric. Rare FeOx ± talc on fracture surfaces. Several very thin quartz-carbonate veinlets. Strong clay alteration. **3% Pyrite**
	96.20	**106.84**	**Siliceous Shale (ShS)** Relatively competent core with discrete rubble zone intervals and broken, blocky core. Dark grey to black, thinly, variably siliceous, bedded shale (10-20° TCA). Rare disseminated pyrite, common elongate pyrite lenses and thin pyrite horizons parallel to bedding. Weak FeOx and minor clay-talc on fracture surfaces. Very rare quartz-carbonate veins < 2mm. Sharp lower contact (27 TCA) appears structural in nature, truncating veins in adjacent cherty unit and with evident shear fabric/textures. **2% Pyrite**
July 30, 2013 **104.53 m - 183.59 m**	**106.84**	**108.69**	**Siliceous Shale (ShS) With Chert (Chert) interbeds(?)** Broken, blocky core, with minor rubble zones, and discrete intervals of competent core. Dark grey-black siliceous shale with elongate pyrite lenses and thin very fine-grained disseminated pyrite horizons oriented parallel with bedding, which is oriented at 19-26° TCA. Sparse very fine-grained disseminated pyrite. Several small (<40 cm) medium grey, very hard, cherty "interbeds". Quartz-carbonate veins, hosted in cherty interbeds, oriented at ~ 75 TCA, are truncated by the structural contacts (oriented perpendicular to contact). As well as a thinner vein set oriented ~10-30 TCA. Rare talc-graphite-clay on fracture surfaces. Lower contact (20° TCA) is sharp, roughly parallel to bedding and weak (bedding parallel) cleavage. **2% Pyrite**
	108.69	**119.10**	**Siliceous Shale (ShS)** Competent core, with discrete minor rubble and gouge intervals < 30 cm. Dark grey-black siliceous shale with elongate pyrite lenses and thin very fine-grained disseminated pyrite horizons oriented parallel with bedding, which is oriented at 4-12° TCA. Sparse very fine-grained disseminated pyrite. Very rare quartz-carbonate (rare ladder) veins <2 mm, oriented ~30° TCA. Rare FeOx and minor Lim/goe on fracture surfaces. Lower contact (17° TCA) displays local shear fabric texture oriented ~15° TCA, roughly parallel to bedding, with minor swelling clays on contact surface. **2% Pyrite**
	119.10	**126.84**	**Chert (Chert) with minor Siliceous Shale (ShS) interbeds (?)** Blocky core. Light-medium grey, very hard cherty lithology with discrete intervals of siliceous shale('30cm) displaying sheared contacts parallel to bedding, which is roughly parallel TCA with slightly undulating margins. Bedding is not evident in cherty layer. Interlayers of siliceous shale display beds which undulate contemporaneously with shear margin. Lower contact is oriented at 7° TCA and displays sheared margins. Chert contains a high density

			(~100 veins/m) of quartz-carbonate veins which have an enigmatic relationship with pyrite aggregates and minor massive pyrite hosted within the chert. Two distinct vein sets are observed, but both are truncated (often displaying minor offsets proximal to shear zone, parallel with fabric) by the upper and lower contacts. Larger vein set cross-cuts smaller vein set. Relatively thick (3-10 mm) quartz-carbonate veins at 60-80° TCA which are perpendicular to the sheared contact (Dilational?) and thinner more abundant quartz carbonate veins at 10-30° TCA. Chert hosts abundant fine grained disseminated pyrite. Minor FeOx-Lim/goe on fracture surfaces. **5% Pyrite**
	126.84	**134.43**	**Siliceous Shale (ShS)** Competent core, with discrete minor rubble and gouge intervals < 5 cm. Dark grey-black siliceous shale with elongate pyrite lenses and thin very fine-grained disseminated pyrite horizons oriented parallel with bedding, which is oriented at 8° TCA. Rare talc-clay-graphite on fracture surfaces. Lower contact (5° TCA) displays local shear fabric texture oriented ~5° TCA, roughly parallel to bedding, with minor graphite and swelling clays on contact surface. **3% Pyrite**
	134.43	**136.00**	**Chert (Chert)** Medium grey, very hard, cherty unit with sharp sheared contacts truncating highly abundant quartz-carbonate veins (100 veins/m) not evident in adjacent siliceous shale unit. Abundant fine grained disseminations of pyrite and minor massive to aggregated pyrite. Quartz-carbonate veins are oriented at 60-80 TCA (<1cm, 15 veins/m) and 10-30 TCA (85 veins/m) and are truncated by both upper (5 TCA) and lower (obscured by minor rubble) structurally controlled contacts. Larger vein set cross-cuts smaller vein set. **5% Pyrite**
	136.00	**139.01**	**Siliceous Shale (ShS)** Competent core, with discrete minor rubble and gouge intervals < 3 cm. Dark grey-black siliceous shale with elongate pyrite lenses and thin very fine-grained disseminated pyrite horizons oriented parallel with bedding, which is oriented at 10° TCA. Rare clay-graphite on fracture surfaces. Sharp lower contact (10° TCA) displays local shear fabric texture oriented ~10° TCA, parallel to bedding, with minor graphite and swelling clays on contact surface. Several qtz-carbonate veins with irregular margins < 3mm thick. **1% Pyrite**
	139.01	**143.09**	**Chert (Chert)** Medium grey, very hard, cherty unit with sharp sheared contacts truncating highly abundant quartz-carbonate veins (100 veins/m) not evident in adjacent siliceous shale unit. Abundant fine grained disseminations of pyrite and minor massive to aggregated pyrite. Quartz-carbonate ± (?FeCarb; orange-buff carbonate) veins are oriented at 60-80 TCA (<1cm, 15 veins/m) and 10-30 TCA (85

			veins/m) and are truncated by both upper (5 TCA) and lower (obscured by minor rubble) structurally controlled contacts. Larger vein set cross-cuts smaller vein set. Very minor clay ± talc on fracture surfaces. **5% Pyrite**
	143.09	**144.42**	**Siliceous Shale (ShS)** Competent core, with discrete minor rubble and gouge intervals < 3 cm. Dark grey-black siliceous shale with elongate pyrite lenses and thin very fine-grained disseminated pyrite horizons oriented parallel with bedding, which is oriented at 10° TCA. Rare talc-clay-graphite on fracture surfaces. Sharp lower contact (20° TCA) displays local shear fabric texture oriented ~20° TCA, roughly parallel to bedding, with minor graphite and swelling clays on contact surface. One qtz-carbonate vein with irregular margins 3 mm thick. **2% Pyrite**
	144.42	**148.83**	**Chert (Chert)** Medium grey, very hard, cherty unit with sharp sheared contacts truncating highly abundant quartz-carbonate veins (~100 veins/m) not evident in adjacent siliceous shale unit. Abundant fine grained disseminations of pyrite and minor massive to aggregated pyrite. Quartz-carbonate ± (?FeCarb; orange-buff carbonate) veins are oriented at 60-80 TCA (<1cm, 25 veins/m) and 10-30 TCA (75 veins/m) and are truncated by both upper 20 TCA) and lower (10 TCA) structurally controlled contacts. Larger vein set cross-cuts smaller vein set. Very minor clay ± talc on fracture surfaces. **6% Pyrite**
	148.83	**155.73**	**Siliceous Shale (ShS)** Competent core. Dark grey-black siliceous shale with elongate pyrite lenses and thin very fine-grained disseminated pyrite horizons oriented parallel with bedding, which is oriented at 17-20° TCA. Sparse very fine-grained disseminated pyrite. Very rare quartz-carbonate veins <3 mm, oriented 30-50° TCA. Rare talc-graphite-clay on fracture surfaces. Lower contact (60° TCA) is sharp with unknown origin (potentially a raft of quartzite?). Single 8 cm interval of chert displaying identical vein characteristics of previous chert unit with two sharp weakly undulating contacts orthogonal to one another at 30 TCA (Upper) and 25 TCA (Lower), both of which cross-cut bedding at an orthogonal angle. **2% Pyrite**
	155.73	**156.82**	**Quartzite (Qtz) fragments (?) in Siliceous Shale (ShS)** Broken and blocky core with minor gouge and clay present among rubble. Medium grey, fine-grained quartzite 'fragments' with weakly granular texture display irregular contact relationship with siliceous shales that appear conformable. Contacts are sharp, angular, almost brecciated in appearance. Strong rubble zone makes any further distinction impossible to do with any confidence. Quartzite contains rare quartz-carbonate veins at 60 TCA. Shales composed less than 10

			% of interval. **Trace-0.25% Pyrite (hosted in shale)**
	156.82	**167.86**	**Siliceous Shale (ShS) with minor Chert (Chert) interbeds (?)** Broken, blocky core, with minor rubble zones, and discrete intervals of competent core. Dark grey-black siliceous shale with elongate pyrite lenses and thin very fine-grained disseminated pyrite horizons oriented parallel with bedding, which is oriented at 23-30° TCA. Sparse very fine-grained disseminated pyrite. Very rare quartz-carbonate veins <5 mm, oriented 20-55° TCA. Rare talc-graphite-clay on fracture surfaces. Lower contact (20° TCA) is sharp, roughly parallel to bedding and weak (bedding parallel) cleavage. Single 50 cm interval (163.48-163.98 m) of chert displaying identical vein characteristics of previous cherty units with two sharp weakly undulating contacts orthogonal to one another at 30 TCA (Upper) and 25 TCA (Lower), both of which appear to cross-cut bedding at an orthogonal angle. **2% Pyrite**
	167.86	**169.15**	**Chert (Chert)** Medium grey, very hard, cherty unit with sharp sheared contacts truncating highly abundant quartz-carbonate veins (~60 veins/m) not evident in adjacent siliceous shale unit. Rare fine grained disseminations of pyrite and minor massive to aggregated pyrite. Quartz-carbonate ± (?FeCarb; orange-buff carbonate) veins are oriented at 30-50 TCA (<4cm, 5 veins/m) and 10-50 TCA (<2 mm, 55 veins/m) and are truncated by both upper 20 TCA) and lower (45 TCA) structurally controlled contacts. Larger vein set cross-cuts smaller vein set. This interval has several veins larger than seen in previous units (up to 4 cm thick). Very minor clay ± talc on fracture surfaces. **3% Pyrite**
	169.15	**182.54**	**Siliceous Shale (ShS)** Competent core. Dark grey-black siliceous shale with elongate pyrite lenses and thin very fine-grained disseminated pyrite horizons oriented parallel with bedding, which is oriented at 14-22° TCA. Weak cleavage fabric oriented orthogonal to bedding (30 TCA). Sparse very fine-grained disseminated pyrite. Rare quartz-carbonate (FeCarb? Buff, orangey carbonate, weak effervescence) veins <14 mm, oriented 0-23° TCA. Very rare talc-graphite-clay on fracture surfaces. Lower contact is subtle (~30° TCA) demarcated by roughly planar layer of quartzite clasts (rip up?). **3% Pyrite**
	182.54	**189.28**	**Siliceous shale (ShS) with Quartzite (Qtz) breccia** Competent core. Dark grey-black siliceous shale with elongate pyrite lenses and thin very fine-grained pyrite horizons oriented parallel to bedding (10-20 TCA) in addition to small (< 6 cm) sub-angular ‘clasts’ of irregularly shaped fine-grained quartzite (possibly sandstone?) roughly distributed in layers which display chaotic matrix to discrete

			clast supported breccia textures. Relatively strong foliation fabric (~30 TCA) is observed cross-cutting bedding. Quartzite lithology contains an increased abundance of pyrite. Lower contact appears gradational, but is obscured by minor rubble zone. **3% Pyrite**
July 31, 2013 **183.59 m - 267.00 m** **EOH**	**189.28**	**200.08**	**Siliceous Shale (ShS)** Competent core. Dark grey-black siliceous shale with elongate pyrite lenses and thin very fine-grained pyrite horizons oriented parallel to bedding (7-20 TCA). Relatively strong foliation fabric (~30 TCA) cross-cuts bedding. Rare quartz-carbonate veins with discrete buff-yellow-brownish coloured carbonate. Sharp, vein parallel lower contact, appears structural in nature (strong clay alteration and minor slickenlines on fracture surface). **3% Pyrite**
	200.08	**201.30**	**Chert (Chert)** Medium grey, very hard, cherty unit with sharp apparently sheared contacts truncating highly abundant quartz-carbonate veins (~120 veins/m) not evident in adjacent siliceous shale unit. Abundant fine-grained disseminations and common massive to aggregated pyrite. Quartz-carbonate ± (?FeCarb; orange-buff carbonate) veins are oriented at 30-65 TCA, with a thick (~1 cm), steep, less abundant set cross-cutting a thinner (<2 mm), shallower, more abundant vein set. Both exhibit weak stockwork characteristics. Lower contact is highly irregular to undulating with apparent shear fabric textures, roughly 15 TCA. **6% Pyrite**
	201.30	**204.58**	**Siliceous Shale (ShS) with Cherty (Chert) interbeds (?)** Broken, blocky core, with minor rubble zones, gouge, and discrete intervals of competent core. Dark grey-black siliceous shale with elongate pyrite lenses and thin very fine-grained disseminated pyrite horizons oriented parallel with bedding(~30° TCA). Very rare quartz-carbonate veins <5 mm, oriented 20-40° TCA (In shale). Sharp lower contact (45° TCA). Single 50 cm interval (202.50-203.00 m) of chert displaying identical vein characteristics of previous cherty units with two sharp weakly undulating contacts orthogonal to one another at 20 TCA (Upper) and 28 TCA (Lower). Chert contains an increased abundance of pyrite **2% Pyrite**
	204.58	**205.38**	**Chert (Chert)** Medium grey, very hard, cherty unit with sharp apparently sheared contacts truncating highly abundant quartz-carbonate veins (~80 veins/m) not evident in adjacent siliceous shale unit. Abundant fine-grained disseminations and common massive to aggregated pyrite. Quartz-carbonate ± (?FeCarb; orange-buff carbonate) veins are oriented at 30-65 TCA, with a thick (~1 cm), steep, less abundant set cross-cutting a thinner (<2 mm), shallower, more abundant vein set. Both exhibit weak stockwork characteristics. Lower contact appears

			vein parallel, but is obscured by strong rubble zone with minor gouge. **6% Pyrite**
	205.38	**236.90**	**Siliceous Shale (ShS) with minor cherty nodules** Competent core. Dark grey-black siliceous shale with elongate pyrite lenses and thin very fine-grained pyrite horizons oriented parallel to bedding (14-20 TCA). Relatively strong, bedding parallel foliation fabric. Discrete, irregularly shaped chert nodules from 1 to 7 cm, contain increased fine-grained disseminated pyrite relative to shale. Rare bedding parallel quartz-carbonate veins with discrete buff-yellow-brownish coloured carbonate; single very large vein (220.30-220.60m) appears to be related to a local increase in the observed pyrite hosted within the shale (up to 90% pyrite up to 3 cm away from vein margin; perhaps indicates sulphide remobilization?). Vein displays irregular to undulating margins which minor fragments of wall rock included. Several discrete occurrences of pyrite nodules and one pyrite band (~232.15m) with minor silica and carbonate. Lower contact appears obscured by a bedding parallel quartz-carbonate vein followed by a strong rubble zone with minor gouge and strong clay alteration. **5% Pyrite**
	236.90	**263.97**	**Siliceous Shale (ShS) with minor cherty beds and lenses** Competent core. Dark grey-black siliceous shale with elongate pyrite lenses and thin very fine-grained pyrite horizons oriented parallel to bedding (10-20 TCA) in addition to very abundant, small (<2 cm) pyrite nodules (which are observed as linear 'chains' of ellipsoid nodules parallel to bedding, and as irregular nodules which cross-cut bedding). Discrete intervals (<10 cm of up to 75% fine-grained disseminated pyrite). Discrete cherty laminations and very thin beds are observed in undulating, layered groups ranging from 1 mm to 5 cm thick, at irregular intervals. Rare quartz-carbonate veins, oriented parallel to bedding, with several exhibiting irregular or undulating margins cross-cutting bedding. Lower contact is obscured by rubble with minor gouge. **10-15% pyrite**
	263.97	**264.90**	**Chert (Chert)** Medium to dark grey, very hard cherty unit. Unit appears very similar to the thin beds and laminations observed in previous unit, but much more massive displaying no apparent bedding and rare irregularly shaped shale 'pieces' < 5 cm. Rare disseminated fine-grained pyrite. Several quart-carbonate veins. Lower contact partially obscured by rubble, but fragments appear to have sharp contacts 10-25 TCA. **0.25 % Pyrite**
	264.90	**267.00 EOH**	**Siliceous Shale (ShS)** Competent core. Dark black moderately siliceous shale with discrete laminations (10 TCA) and small blebby and fine-grained disseminated pyrite. Weak foliation fabric cross-cuts bedding (15 TCA). Rare quartz-

			carbonate veins (60 TCA). **2% Pyrite** **EOH**

GeoSpark Logger Print Logs ~ Collars

DataSet: **ORO_GF**

Hole: ORO13-03

Depth (m)	Hole Type	Core Diamete	Grid ID	East	North	Elevation	Survey Method	Survey Date	Survey By	Date Started	Date Completed	Logged By	Prospect	Validated By
267 m	DD	HQ/NQ	UTM09N_NAD83	401456	7020191	1550	GPS	26/07/2013	RC	28/07/2013	31/07/2013	Svan	Main Zone	Svan

GeoSpark Logger Print Logs ~ DH Surveys

DataSet: ORO_GF

Hole ID: ORO13-03

Depth (m)	Survey Method	Grid ID	Dip	Surv. Tool Azimuth	Magnetic Declination	Corrected Azimuth	Magnetics	Date Surveyed	Survey Instrument	Bad Reading	Comments
0	COLL	UTM09N_NAD83	-75	45	0	45		28/07/2013	CMP	☐	
24.38	EZ Shot	UTM09N_NAD83	-75.2	21.4	22.5	43.9		31/07/2013	EZ	☐	
67.67	EZ Shot	UTM09N_NAD83	-75.4	21	22.5	43.5		29/07/2013	EZ	☐	
130.76	EZ Shot	UTM09N_NAD83	-74.6	15.1	22.5	37.6		30/07/2013	EZ	☐	
182.58	EZ Shot	UTM09N_NAD83	-71.5	13.7	22.5	36.2		30/07/2013	EZ	☐	
267	EZ Shot	UTM09N_NAD83	-69.7	12.9	22.5	35.4		31/07/2013	EZ	☐	

Gold Fields Canada

Signed: _______________

DataSet: ORO_GF

Hole ID: ORO13-03

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	0	10.36	Overburden	Overburden (OB)	Overburden

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	10.36	25.6	Siltstone	undifferentiated shale	Blk, vsft, weathered undiff-shale. Brkn and Blky, very friable. Uncertain bedding and cleavage layering (banding). No vis sulph.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	10.36	25.6	UnMin	0											No vis. Sulph.

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	10.36	25.6	NoVeins	n/an/a											no veins

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	10.36	25.6	RUB	VS	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	25.6	34	Siltstone	shale argillite and siltstone	Brkn-blky w/ minor rub-zones. Drk gry, thinly bedded(45TCA) shale w/ argil+silt beds. Py horizons, nodules and sparse diss'ns. Wk bed-parallel and bed x-cutting cleavages (~60TCA). Common scorodite fracsurf. Rare FeOx fracsurf. 2% Py.

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Signed: ______________

DataSet: ORO_GF

Hole ID: ORO13-03

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
25.6	34	Py	2	DIS										small pyrite nodules (< 1cm) that cross-cut bedding and thin pyrite horizons (< 7 mm) oriented parallel to bedding ~45° TCA. Sparse disseminated pyrite.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
25.6	29.95	RUB	S	
29.95	30.04	FLTG	W	
30.95	30.97	BED	S	45
30.97	33.4	RUB	M	
33.4	33.43	BED	S	50
33.43	36.85	RUB	W	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	34	47.45	Siltstone	Siliceous shale	Brkn-blky w/ minor rub-zones. Drk grey-blk. Thinly bedded(40TCA), variably siliceous shale. Py horizons, nodules, lenses and diss'ns. Str rub-zone at lwr cntct. FraCon scorodite. Rare FraCon FeOx. Wk bed-parallel and bed-x-cut(65TCA) clvgs. 3% py.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
34	47.45	Py	3	DIS										pyrite nodules (<1 cm) that cross-cut bedding in addition to small pyrite lenses (<3 cm x 0.3 cm) and abundant thin pyrite horizons (<5 mm) oriented parallel to bedding (~40° TCA). Sparse disseminated fine-grained pyrite

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
25.6	47.45	VQCarb	n/a	0.1										Rare qtz-carb veins.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
36.85	36.87	FLTG	W	
37.45	37.54			
40.95	40.96	FOL		40
43.62	43.63			60
43.67	43.68			40
45.95	47.45	FLT	M	

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DataSet: ORO_GF

Hole ID: ORO13-03

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	47.45	49.14	Siltstone	Siliceous shale	Bkn-blky w/ mnr rubzones. Drk-grey-blk thnly bedded (~50TCA)shale w/<4cm interbeds of cal-mdstn(Wk HCl rxn). Py horizons, nodules, lenses and diss'ns. Rare qtz veins w/ minor FeOx staining. Wk clvg bed-parallel and x-cut bed (5-15TCA). 4%py.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	47.45	49.14	Py	4	DIS										Thin horizons of pyrite and thin pyrite lenses are observed parallel to bedding (~50° TCA). Trace disseminated pyrite in shale, with more abundant disseminated pyrite observed in calcareous interbeds.

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	48.01	48.04	BED	S	40
	48.95	48.96	FOL	W	10
	48.96	50.89	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	49.14	81.89	Siltstone	Siliceous shale	Drk-gry-blk thnly bded(30-40TCA) sil-shale w/ rare cherty lenses, py horizons, lenses, nodules and diss'ns. Cmon qtz veins bed x-cut and parallel. Uncmon fracon scorodite and FeOx. Wk bed x-cut and parallel clvgs(5-15TCA). 7%py

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DataSet: ORO_GF

Hole ID: ORO13-03

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
49.14	81.89	Py	7	DIS										thin pyrite horizons (<1.25 cm) and small pyrite lenses (<3 cm) oriented parallel to bedding (30-40° TCA). wispy disseminated horizons and large irregular shaped nodules (<7 cm) that occur both parallel to and cross-cut bedding. Sprs fg diss py.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
50.89	50.95	FLTG	W	
54.1	54.13	FLT		45
56.95	56.96	FOL		35
61.75	61.76			45
61.76	61.78	BED	S	
61.95	62.05	FLTG	W	
62.05	64.45	RUB		
64.45	64.5	FLTG		
64.5	68.95	RUB	S	
73.8	73.95		W	
74.95	75.45		M	
75.45	75.59	FLTG		
75.59	75.95	RUB		
75.95	76.89999	FLTG		
76.89999	79.86	RUB	W	
80.85	80.86	BED	S	30
81.82999	81.85	FLTG	W	
81.85	84.95	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	81.89	85.39	Siltstone	Siliceous shale	Brkn-blky core w/ rubble at top of intrvl. Lgt-med grey sil-shale w/ thin pyrite horizons parallel to bed(~45TCA). Txt P-Oalt. Qtz-carb±FeCarb±clay±blk min(?) vein and breccia ovrprnts prmry txts

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DataSet: ORO_GF

Hole ID: ORO13-03

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
81.89	85.39	Py	2	DIS										. Thin pyrite horizons and rare small pyrite lenses (<1 X 0.2 cm) oriented parallel to bedding (~45° TCA), discrete wispy lineations of disseminated pyrite cross-cut bedding. Rare disseminated fine-grained pyrite

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
47.45	85.39	VQCarb	n/a	0.2										Common qtz veins/veinlets (ave 45 TCA-parallel to bedding). Several have irregular margins, most planar. Some also have wall rock inclusions.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	85.39	91.24	Siltstone	Siliceous shale	Comptnt core w/ discrete rub zones. Drk grey-blk, thnly, variably siliceous bedded shale(30-40TCA). Lrg py-apy lenses(<25cm)and py horizons parallel to beds, abundant diss fg py. Several diffuse veinlets of pyrite-arsenopyrite at 87.70-87.95m.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
85.39	91.24	Py	10	DIS	Apy	1	DIS							bedding concordant intervals of mass py-apy (90.75-91 m; 93.32-93.40 m; 94.04-94.29m), abundant diss fg and aggregate masses of pyrite,pyrite on fracture surfaces and very thin horizons of fine-grained pyrite. Diffus py-apy veinlets.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
85.39	91.24	VQCarb	n/a	3	Vpy		0.5							Qtz-carb-FeOx-FeCarb-blk unidentified min(?) in veins and HBX. Diffuse py-apy veinlets <1 mm with diss py-apy extending beyond the margin with gradual reduction in occurance with distance from vein selvedge.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
85.55	85.56	BED	S	25
86.25999	87.02	RUB	W	
87.82999	87.85	BED	S	20
90.53	90.53999	FOL	W	25

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DataSet: **ORO_GF**

Hole ID: **ORO13-03**

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	91.24	96.2	Tectonic/Fault Rock - Undifferentiated	Fault (UT)	Vry soft, med-grey, clay-rich fault zone. Vry brkn, blky, hihly fragmented to friable core "annealed" by high clay content. Txt P_Oalt. Common diss and aggregate py. Rare FeOx-talc fracsurf. Rare qtz-carb veinlets. Str clay alt'n.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	91.24	96.2	Py	3	DIS										Common disseminated fine grained pyrite and rare aggregated masses partially aligned with local fracture fabric

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	91.24	96.2	VQCarb	n/a	0.25										thin, "wispy" qtz-carb veinlets

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	91.24	91.25	FRAC	S	20
	91.25	95.64999	FLT		
	95.64999	95.71	FLTG		
	95.71	96.2	RUB	VS	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	96.2	106.84	Siltstone	Siliceous shale	Drk gry-blk sil shale w/ elongate py lenses and horizons parallel to bed(10-20 TCA). Rare diss fg py. Rare qtz-carbveins. Very rare FeOx-talc on fracsurf. Sharp lower contct (~27 TCA).

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	96.2	106.84	Py	3	DIS										Rare disseminated pyrite, common elongate pyrite lenses and thin pyrite horizons parallel to bedding(10-20 TCA)

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	96.2	106.84	VQCarb	n/a	0.1										Rare qtz-carb veins.

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	106.84	108.69	Siltstone	Siliceous shale	Drk gry-blk sil shale w/ elongate py lenses and horizons parallel to bed(19-26 TCA). Rare diss fg py. Rare qtz-carbveins. Very rare clay-graphite-talc on fracsurf. Sharp lower contct (~20 TCA).

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Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
106.84	108.69	VQCarb	n/a	5										Quartz-carbonate veins, hosted in cherty interbeds, oriented at ~ 75 TCA, are truncated by the structural contacts (oriented perpendicular to contact). As well as a thinner vein set oriented ~10-30 TCA

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
106.84	106.85	CF		27
107.44	107.45	BED		20

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	108.69	119.1	Siltstone	Siliceous shale	Drk grey-blk sil shale w/ elongate py lens and thn fg py horizonz parallel to bed(4-12 TCA). Sparse vfg diss py. Lwer contact(17 TCA) displays shear fabric/txts(15 TCA). Wk FeOx-Lim/Goe on fracsurf. Rare qtz-carb veinlets.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
106.84	119.1	Py	2											pyrite lenses and thin very fine-grained disseminated pyrite horizons oriented parallel with bedding, which is oriented at 4-12° TCA

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
108.69	119.1	VQCarb	n/a	0.1										Very rare quartz-carbonate (rare ladder) veins <2 mm, oriented ~30° TCA

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
112	112.01	BED		4
112.16	113.69	FLT	W	
113.69	114.1	RUB	M	
116.5	116.51	BED		4
118.97	118.98	FOL		15

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	119.1	126.84	Siltstone	Chert (SCCH)	Lgt-med vry hard chertw/ discrete sil shale intrvls<30cm. No evident beds. Shear fab cntcs(~7L-17U TCA). Qtz-carb veins (<1cm, 10/m, ~60-80TCA; <2 mm, 90/m, 10-30TCA). Abundant diss fg py, minor py aggregates and massive py. Minor FeOx-Lim/goe on fracsurf

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Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
119.1	126.84	Py	5	DIS										Fg diss, common massive aggregates of py

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
119.1	124.86	VQCarb	n/a	10										Larger vein set cross-cuts smaller vein set. Relatively thick (3-10 mm) quartz-carbonate veins at 60-80° TCA which are perpendicular to the sheared contact (Dilational?) and thinner more abundant quartz carbonate veins at 10-30° TCA.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
119.1	119.11	CF		17
120.28	121.5	RUB	W	
125.8	126	FLT		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	126.84	134.43	Siltstone	Siliceous shale	Drk-grey-blk sil shale w/ elongate py lenses and thin wispy py horizons parallel to bed (8 TCA). Rare talc-graph-clay fracsurf. Lwr contact 5 TCA displays sheared fabric. Rare vfg diss py.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
126.84	134.43	Py	3	DIS										rare fg diss, common py lenses and horizons parallel to bedding

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
124.86	134.43	NoVeins	n/a											no significant veins.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
126.84	126.85	CF		7
131.33	131.34	BED		8
132.58	134.43	RUB	W	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	134.43	136	Siltstone	Chert (SCCH)	Med grey. Vry hard chert. Sharp structural U/L contacts. Abundant fg diss py, minor massive-aggregate py. Very abundant (100 v/m) qtz-carb veins oriented at 60-80 (bigger veins; x-cut smaller veins) and 10-30 (smaller veins)

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Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
134.43	136	Py	5	DIS										Fg diss, common massive aggregates of py

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
134.43	136	VQCarb	n/a	10										Quartz-carbonate veins are oriented at 60-80 TCA (<1cm, 15 veins/m) and 10-30 TCA (85 veins/m) and are truncated by contacts

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
134.43	134.44	CF		5

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	136	139.01	Siltstone	Siliceous shale	Drk grey-blk sil shale w/ elongate py lenses and thin py horizons parallel to bedding (10 TCA). Sharp lower contact appears structural (Shear textures) at 10 TCA. Minor graphite-clay on fracture surfaces. Several qtz-carb veins with irregular margins<3mm.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
136	139.01	Py	1	DIS										rare fg diss, common py lenses and horizons parallel to bedding

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
136	139.01	NoVeins	n/a											No significant veins.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
136	136.01	CF		
138.1	138.8	RUB	M	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	139.01	143.09	Siltstone	Chert (SCCH)	Med grey. Vry hard chert. Sharp structural U/L(22 TCA) contacts. Abundant fg diss py, minor massive-aggregate py. Very abundant (100 v/m) qtz-carb(FeCarb??) veins oriented at 60-80 (bigger veins; x-cut smaller veins) and 10-30 (smaller veins). Mnr cly-tlc

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Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
139.01	143.09	Py	5	DIS										Fg diss, common massive aggregates of py

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
139.01	143.09	VQCarb	n/a	15										Quartz-carbonate ± (?FeCarb; orange-buff carbonate) veins are oriented at 60-80 TCA (<1cm, 15 veins/m) and 10-30 TCA (85 veins/m) and are truncated by contacts

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
139.01	139.02	CF		10
139.02	141.35	RUB	M	
141.35	141.43	FLT	W	
141.43	143.09	RUB	M	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	143.09	144.42	Siltstone	Siliceous shale	Drk grey-blk sil shale w/ elongate py lenses and thin py horizons parallel to bedding (10 TCA). Sharp lower contact appears structural (Shear textures) at 20 TCA. Minr talc-graphite-clay on fracture surfaces. One qtz-carb veins with irregular margins 5mm.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
143.09	144.42	Py	2	DIS										rare fg diss, common py lenses and horizons parallel to bedding

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
143.09	144.42	NoVeins	n/a											no sig veins.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
143.09	143.1	CF		
143.7	143.71	BED		10

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	144.42	148.83	Siltstone	Chert (SCCH)	Med grey. Vry hard chert. Sharp structural U/L(10 TCA) contacts. Abundant fg diss py, minor massive-aggregate py. Very abundant (100 v/m) qtz-carb(FeCarb??) veins oriented at 60-80 (bigger veins; x-cut smaller veins) and 10-30 (smaller veins). Mnr cly-tlc

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Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
144.42	148.83	Py	6	DIS										Fg diss, common massive aggregates of py

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
144.42	148.83	VQCarb	n/a	20										Quartz-carbonate ± (?FeCarb; orange-buff carbonate) veins are oriented at 60-80 TCA (<1cm, 25 veins/m) and 10-30 TCA (75 veins/m) and are truncated by both contacts

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
144.42	144.43	CF		20
144.43	146	RUB	W	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	148.83	155.73	Siltstone	Siliceous shale	Drk gry-blk sil shale. Elongate py lenses and thin py horizons parallel to bed(17-20TCA). Rare qtz-carb veins <3mm. Single intrvl<8cm of chert. Lower contact unknown ~60 TCA.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
148.83	148.84	CF		10
149.32	149.33	BED		17
154.45	154.46			20

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	155.73	156.82	Sandstone	Quartzite - nonspecific	Brkn, blky w/ mnr gouge. Med-grey qtzite(90%) frags in sil shale(10%). Common qtz-carb veins. Unknwn nature of contacts.

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DataSet: ORO_GF

Hole ID: ORO13-03

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
148.83	167.82	VQCarb	n/a	0.1										Very rare quartz-carbonate veins <3 mm, oriented 30-50° TCA

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
155.73	155.74	CU		60
155.74	156.82	RUB	S	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	156.82	167.86	Siltstone	Siliceous shale	Brkn-blky w/ mnr rub. Drk-gry-blk sil shale w/ elongate py lenses-horizons parallel to bed(23-30TCA). Single intrvl chert (<50cm). Rare diss py. Rare carb veins. Lwr contact is 20 and roughly parallel to bedding parallel cleavage (20-30TCA). Tlc-cly F.S.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
148.83	167.86	Py	2	DIS										rare fg diss, common py lenses and horizons parallel to bedding. Exception being small fragments of quartzite between 155.73-156.82 m.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
156.82	156.83	CU		
156.83	159.77	RUB	M	
159.77	159.78	BED		23
159.78	163.98	RUB	W	
165.12	165.13	BED		30
167.64	167.65	FOL	W	27

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	167.86	169.15	Siltstone	Chert (SCCH)	Med grey. Vry hard chert. Sharp structural U/L(45 TCA) contacts. Cmon fg diss py, minor massive-aggregate py. Very abundant (60 v/m) qtz-carb(FeCarb??) veins at 30-50 (big veins x-cut small veins) and 10-50 (smaller veins). Mnr cly-tlc

DataSet: ORO_GF

Hole ID: ORO13-03

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
167.82	169.15	VQCarb	n/a	10										Quartz-carbonate ± (?FeCarb; orange-buff carbonate) veins are oriented at 30-50 TCA (<4cm, 5 veins/m) and 10-50 TCA (<2 mm, 55 veins/m) and are truncated by both contacts

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
167.86	167.87	CF		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	169.15	182.54	Siltstone	Siliceous shale	Drk gry-blk sil shale w/ elongate py lenses and horizons parallel to bed(14-23TCA). Rare diss fg py. Wk clvg fab ~30TCA. Rare qtz-carb(FeCarb?) veins. Very rare talc-clay-graph on fracsurf. Lwr contct conf w/ qtzite clast layer (~30 TCA)

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
167.86	182.54	Py	3	DIS										rare fg diss, common py lenses and horizons parallel to bedding within shale, and as fg diss, massive aggregates in cherty unit.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
169.15	182.54	VQCarb	n/a	0.5										Rare quartz-carbonate (FeCarb? Buff, orangey carbonate, weak effervescence) veins <14 mm, oriented 0-23° TCA

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
169.15	169.16	CF		45
169.16	171.05	RUB	M	
171.84	171.85	BED		14
175.37	175.38	FOL	W	30
175.9	175.91	BED		22
176.9	177	FLT	M	
177	177.4	RUB	W	
181.01	181.45			

DataSet: ORO_GF

Hole ID: ORO13-03

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	182.54	189.28	Siltstone	Siliceous shale	Cmptnt core. Drk gry-blk sil shale w/ elongate py lenses and thn py horizons parallel to bed(10-20TCA). Irregullar fine grained quartzite clasts exhibit chaotic, matrix to clast supported BX txt. 30 TCA foliat'n fab.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	182.54	182.55	CS		30
	185.9	185.91	FOL		22
	186.94	186.95			30
	189.2	189.25	FLT		
	189.25	190.65	RUB	VS	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	189.28	200.08	Siltstone	Siliceous shale	Cmptnt core. Drk gry-blk sil shale w/ elongate py lenses and thn py horizons parallel to bed(7-20TCA). 30 TCA foliat'n fab. Rare qtz-carb veins. Sharp, vn parallel lwr cntct w/ minor slickenlines on fracsurf.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	182.54	200.08	Py	3	DIS										Fg diss py horizons, lenses and rare nodules.

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	182.54	200.08	VQCarb	n/a	0.1										Rare qtz-carb (buff-yellow-brown carb; Fecarb?)

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	193.88	193.89	BED		7
	193.89	193.9	FOL		46
	195.5	195.55	FLT	VS	
	197.4	197.41	BED		20
	199	199.78	RUB	M	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	200.08	201.3	Siltstone	Chert (SCCH)	Med grey. Vry hard chert. Sharp undulating lwr contact (15TCA). Cmon fg diss py, minor massive-aggregate py. Very abundant (120 v/m) qtz-carb(FeCarb??) veins at 30-65.

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DataSet: ORO_GF

Hole ID: ORO13-03

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
200.08	201.3	Py	6	DIS										Abundant fine-grained disseminations and common massive to aggregated pyrite.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
200.08	201.3	VQCarb	n/a	7										Quartz-carbonate ± (?FeCarb; orange-buff carbonate) veins are oriented at 30-65 TCA, with a thick (~1 cm), steep, less abundant set cross-cutting a thinner (<2 mm), shallower, more abundant vein set. Both exhibit weak stockwork characteristics

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
200.08	200.09	CF		45

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	201.3	204.58	Siltstone	Siliceous shale	Bkn-blky w/ mnr rubb-gouge. Drk-gry-blk sil shale w/ elongate py lens/horizons parallel to bed(30TCA). Single interval of chert (202.5-203m). Sharp lower contact (45 TCA).

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
201.3	204.58	Py	2	DIS										elongate pyrite lenses and thin very fine-grained disseminated pyrite horizons oriented parallel with bedding(~30° TCA)

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
202.5	203	VQCarb	n/a	5										Quartz-carbonate ± (?FeCarb; orange-buff carbonate) veins are oriented at 30-65 TCA, with a thick (~1 cm), steep, less abundant set cross-cutting a thinner (<2 mm), shallower, more abundant vein set. Both exhibit weak stockwork characteristics
203	204.58			0.1										Rare qtz-carb (potentially Fecarb; buff-yellow-brown, weak rxn to HCl)
201.3	202.5	NoVeins												no veins

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
201.3	201.31	CF		15
204.39	204.49	FLT		

DataSet: **ORO_GF**

Hole ID: **ORO13-03**

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	204.58	205.38	Siltstone	Chert (SCCH)	Med grey. Vry hard chert. Cmon fg diss py, minor massive-aggregate py. Very abundant (80 v/m) qtz-carb(FeCarb??) veins at 30-65. Lower contact appears vein parallel but is obscured by rubble.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
204.58	205.38	Py	6	DIS										Abundant fine-grained disseminations and common massive to aggregated pyrite.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
204.58	205.38	VQCarb	n/a	10										Quartz-carbonate ± (?FeCarb; orange-buff carbonate) veins are oriented at 30-65 TCA, with a thick (~1 cm), steep, less abundant set cross-cutting a thinner (<2 mm), shallower, more abundant vein set. Both exhibit weak stockwork characteristics

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
204.58	204.59	CU		45

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	205.38	236.9	Siltstone	Siliceous shale	Drk gry-blk sil shale w/ elongate py lenses and horizons bed parallel (14-20TCA) and irreg chert nod's that x-cut bed. Str foliat'n (30TCA). Several large qtz-carb veins associated w/ local py increase. Lower cntc obscured by rubble.

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DataSet: ORO_GF

Hole ID: ORO13-03

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
205.38	236.9	Py	5	DIS										elongate pyrite lenses and thin very fine-grained pyrite horizons oriented parallel to bedding (14-20 TCA)

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
205.38	205.39	CF		
207.35	207.36	BED		20
212.79	212.8	FOL		
216.9	217.1	FLT		30
217.1	218.2	RUB	W	
218.2	218.52	FLT		
219.44	219.45	BED		15
221.55	221.56			18
224.85	224.86			20
227.01	227.02	FOL	W	14
227.5	227.51	BED		24
230.1	230.18	FLT	W	30
230.18	232	RUB	M	
235	235.01	BED		20

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	236.9	263.97	Siltstone	Siliceous shale	Drk-gry-blk sil shale w/ elongate py lenses and horizons parallel to bed(10-20TCA) as well as very abundant pyrite nodules and very abudant diss py. Discrete cherty laminations and thin beds. Rare qtz-carb vns. Lower cntct obscured by rubble.

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DataSet: ORO_GF

Hole ID: ORO13-03

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
236.9	263.97	Py	15	DIS										Abundant fg diss py in elongate lenses and horizons, as well as abundant nodules.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
205.38	263.97	VQCarb	n/a	0.1										Rare qtz-carb (potentially Fecarb; buff-yellow-brown, weak rxn to HCl). Several very large variants (up to 30 cm) with undulating to irregular, typically bedding parallel margins and minor discrete wall rock inclusions.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
236.92	237.43	RUB	M	
238.71	238.72	BED		20
243.5	243.51			15
246	246.1	FLT		
250.77	250.78	BED		37
251.33	251.55	FLT		
253.52	253.53	FOL	M	2
253.93	254.5	FLT	S	
254.6	254.61	BED		11
258.01	258.02			12
258.61	259	RUB	M	
260.58	260.59	BED		3
262.22	262.23			6

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	263.97	264.9	Siltstone	Chert (SCCH)	Med-drk grey, vry hard cherty unit w/ massive appearance and rare irregular shale 'pieces'. Rare diss py. Lwr contact obscured by rubble, but appears ~10-25 TCA.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
263.97	264.9	Py	0.25	DIS										Rare fg diss py.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

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DataSet: **ORO_GF**

Hole ID: **ORO13-03**

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	264.9	267	Siltstone	Siliceous shale	Competent core. Dark black moderately siliceous shale with discrete laminations (10 TCA) and small blebby and fine-grained disseminated pyrite. Weak foliation fabric cross-cuts bedding (15 TCA). Rare quartz-carbonate veins (60 TCA). EOH.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
264.9	267	Py	2	DIS										small blebby and fine-grained disseminated pyrite

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
263.97	267	VQCarb	n/a	0.1										Rare sharp, planar qtz-carb veins.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
263.97	267	RUB	S	

DataSet: ORO_GF

Hole ID: ORO13-03

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
10.36	11.89	1.53	0.64	41.8300	0	0	sof	100	100	SFT		
11.89	13.41	1.52	0.65	42.7632	0.35	23.03	sof	75	75	SFT		
13.41	14.93	1.52	0.8	52.6316	0	0	sof	100	100	SFT		
14.93	16.46	1.53	0.56	36.6013	0	0	sof	100	100	SFT		
16.46	17.98	1.52	1.12	73.6841	0	0	sof	100	100	SFT	gouge	
17.98	19.51	1.53	0.97	63.3987	0	0	sof	100	100	SFT		
19.51	21.03	1.52	0.25	16.4474	0	0	sof	100	100	SFT		
21.03	22.55	1.52	1.02	67.1052	0	0	sof	100	100	SFT		
22.55	24.08	1.53	0.83	54.2484	0.14	9.15	sof	100	100	SFT		
24.08	25.6	1.52	0.45	29.6053	0	0	sof	100	100	SFT		
25.6	28.34	2.74	1.3	47.4453	0	0	sof	100	100	STR	Individual frag getting stronger	
28.34	28.64	0.3	0.25	83.3330	0	0	mode	50	50	STR		
28.64	29.86	1.22	0.84	68.8525	0.1	8.2	sof	100	100	SFT		
29.86	30.48	0.62	0.26	41.9356	0	0	sof	100	100	SFT		
30.48	31.69	1.21	0.84	69.4213	0.1	8.26	sof	100	100	SFT		
31.69	32.61	0.92	0.6	65.2175	0.1	10.87	mode	50	50	SFT		
32.61	33.53	0.92	0.65	70.6523	0.27	29.35	sof	50	50	STR		
33.53	33.83	0.3	0.29	96.6657	0	0	mode	25	25	STR		
33.83	34.74	0.91	0.45	49.4506	0	0	sof	100	100	SFT		
34.74	36.26	1.52	0.6	39.4737	0	0	sof	100	100	SFT		
36.26	36.87	0.61	0.25	40.9838	0	0	sof	100	100	SFT		
36.87	37.79	0.92	0.5	54.3477	0	0	sof	100	100	SFT		
37.79	38.7	0.91	0.6	65.9341	0	0	sof	100	100	SFT		
38.7	40.23	1.53	0.4	26.1438	0	0	sof	100	100	SFT		
40.23	40.84	0.61	0.35	57.377	0	0	sof	100	100	SFT		
40.84	42.06	1.22	0.6	49.1803	0.1	8.2	sof	100	100	SFT		
42.06	43.27	1.21	0.65	53.7191	0	0	mode	50	50	STR		
43.27	43.58	0.31	0.27	87.0964	0	0	mode	30	30	STR		
43.58	44.8	1.22	0.47	38.5247	0	0	mode	35	35	STR		
44.8	45.1	0.3	0.16	53.3328	0	0	mode	15	15	STR		
45.1	46.32	1.22	0.99	81.1477	0	0	mode	65	65	STR		
46.32	47.24	0.92	0.65	70.6520	0	0	sof	100	100	SFT		
47.24	48.75	1.51	1.09	72.1855	0.71	47.02	mode	50	50	STR		
48.75	49.98	1.23	0.83	67.4797	0.1	8.13	mode	50	50	STR		
49.98	50.29	0.31	0.25	80.6448	0	0	sof	50	50	STR		
50.29	50.89	0.6	0.35	58.3335	0.1	16.67	mode	25	25	STR		
50.89	52.42	1.53	1.05	68.6273	0	0	mode	100	100	STR		

Hole ID: **ORO13-03**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
52.42	53.94	1.52	1.15	75.6579	0.8	52.63	mode	35	35	STR		
53.94	55.16	1.22	0.83	68.0329	0	0	mode	45	45	STR		
55.16	56.08	0.92	0.79	85.8694	0.2	21.74	mode	14	14	STR		
56.08	57.6	1.52	1.3	85.5263	0.87	57.24	mode	40	40	STR		
57.6	59.12	1.52	1.37	90.1318	0.5	32.89	sli	25	25	STR		
59.12	60.65	1.53	1.21	79.0848	0.45	29.41	sli	25	25	STR		
60.65	61.87	1.22	0.83	68.0329	0.2	16.39	sli	30	30	STR		
61.87	62.48	0.61	0.45	73.7704	0.11	18.03	sof	100	100	SFT		
62.48	62.78	0.3	0.2	66.666	0	0	sli	15	15	STR		
62.78	63.7	0.92	0.56	60.8697	0.25	27.17	mode	50	50	STR		
63.7	64.61	0.91	0.7	76.9231	0.22	24.18	mode	50	50	STR		
64.61	65.53	0.92	0.4	43.4784	0	0	mode	70	70	STR		
65.53	66.44	0.91	0.6	65.9338	0.14	15.38	mode	45	45	STR		
66.44	68.27	1.83	1.4	76.503	0.1	5.46	mode	45	45	STR		
68.27	70.86	2.59	1.25	48.2625	0	0	sof	75	75	STR		
70.86	72.85	1.99	1.23	61.8091	0.71	35.68	mode	17	17	STR		
72.85	75.59	2.74	1.5	54.7446	0	0	mode	100	100	STR		
75.59	77.42	1.83	0.6	32.7869	0	0	sof	100	100	STR		
77.42	78.95	1.53	1.1	71.8955	0.22	14.38	mode	35	35	STR		
78.95	79.86	0.91	0.62	68.1316	0.4	43.96	mode	19	19	STR		
79.86	80.47	0.61	0.71	116.393	0.25	40.98	mode	20	20	STR		
80.47	82.45	1.98	1.65	83.3335	0.75	37.88	mode	100	100	STR		
82.45	83.51	1.06	0.72	67.9242	0.14	13.21	mode	40	40	STR		
83.51	86.26	2.75	2.2	80	0.4	14.55	mode	60	60	STR		
86.26	87.02	0.76	0.85	111.843	0.2	26.32	mode	35	35	STR		
87.02	88.69	1.67	1.4	83.8321	1.15	68.86	mode	10	10	STR		
88.69	89.61	0.92	0.8	86.9567	0.22	23.91	mode	18	18	STR		
89.61	91.44	1.83	1.7	92.8961	0.77	42.08	mode	60	60	STR		
91.44	92.66	1.22	0.86	70.4922	0.26	21.31	sof	100	100	STR		
92.66	94.18	1.52	1.5	98.6839	1.26	82.89	sof	25	25	SFT		
94.18	95.71	1.53	1.2	78.4314	0.52	33.99	sof	50	50	SFT		
95.71	97.53	1.82	1.4	76.9231	0	0	sof	100	100	STR		
97.53	98.75	1.22	0.98	80.3278	0.54	44.26	mode	11	11	STR		
98.75	100.28	1.53	1.36	88.889	1.05	68.63	mode	14	14	STR		
100.28	100.88	0.6	0.68	113.334	0.5	83.33	sli	8	8	STR		
100.88	103.33	2.45	1.82	74.2856	1.12	45.71	sli	43	43	STR		
103.33	106.37	3.04	2.97	97.6973	1.22	40.13	sli	55	55	STR		
106.37	107.89	1.52	1.45	95.395	0.6	39.47	sli	40	40	STR		
107.89	109.11	1.22	0.883	72.377	0.14	11.48	sli	50	50	STR		

Hole ID: **ORO13-03**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
109.11	112.18	3.07	2.79	90.8795	1.09	35.5	sli	45	45	STR		
112.18	113.69	1.51	1.05	69.5363	0	0	sli	100	100	STR		
113.69	115.51	1.82	1.35	74.1758	0.5	27.47	sli	100	100	STR		
115.51	117.95	2.44	2.15	88.1149	0.75	30.74	sli	40	40	STR		
117.95	121	3.05	2.39	78.3606	0.12	3.93	sli	75	75	STR		
121	123.12	2.12	1.77	83.4905	0.48	22.64	sli	80	80	STR		
123.12	124.66	1.54	1.26	81.8181	0.51	33.12	sli	17	17	STR		
124.66	126.49	1.83	1.75	95.6287	0.58	31.69	mode	36	36	STR		
126.49	129.23	2.74	2.31	84.3066	0.37	13.5	sli	38	38	STR		
129.23	129.54	0.31	0.35	112.904	0	0	sli	5	5	STR		
129.54	132.58	3.04	2.71	89.1445	1.11	36.51	sli	47	47	STR		
132.58	135.02	2.44	1.82	74.5901	0.1	4.1	sof	100	100	STR		Sof = minor graphite on fracture surfaces
135.02	136.85	1.83	1.45	79.2349	0.51	27.87	mode	100	100	STR		
136.85	139.9	3.05	2.46	80.6561	0.67	21.97	sli	100	100	STR		
139.9	141.42	1.52	1.09	71.7103	0.1	6.58	sli	100	100	STR		
141.42	143.25	1.83	1.29	70.4917	0.22	12.02	mode	100	100	STR		
143.25	146	2.75	2.42	88.0000	0.59	21.45	mode	100	100	VSTR		
146	147.21	1.21	1.11	91.7350	0.24	19.83	sli	23	23	VSTR		
147.21	149.04	1.83	1.65	90.1646	0.82	44.81	sli	41	41	STR		
149.04	152.1	3.06	2.73	89.2153	1.22	39.87	sli	22	22	VSTR		
152.1	154.38	2.28	2.12	92.9825	0.5	21.93	sli	43	43	STR		
154.38	155.14	0.76	0.7	92.1059	0.21	27.63	sli	15	15	STR		
155.14	156.82	1.68	1.5	89.2853	0.44	26.19	mode	100	100	STR		
156.82	158.8	1.98	1.68	84.8487	0	0	mode	100	100	VSTR		
158.8	160.32	1.52	1.46	96.0524	0.11	7.24	mode	100	100	STR		
160.32	161.85	1.53	1.32	86.2746	0.42	27.45	sli	31	31	STR		
161.85	163.98	2.13	1.79	84.038	0.15	7.04	sli	85	85	VSTR		
163.98	167.03	3.05	2.58	84.5901	0.98	32.13	sli	29	29	STR		
167.03	170.08	3.05	2.5	81.9671	0.7	22.95	sli	100	100	STR		
170.08	171.6	1.52	1.24	81.5787	0.33	21.71	mode	100	100	STR		
171.6	173.43	1.83	1.58	86.3394	0.61	33.33	sli	22	22	STR		
173.43	176.17	2.74	2.45	89.4159	0.76	27.74	sli	32	32	STR		
176.17	178.3	2.13	1.52	71.3613	0.37	17.37	mode	100	100	STR		
178.3	181.35	3.05	2.56	83.9343	0.68	22.3	sli	62	62	STR		
181.35	184.4	3.05	2.72	89.1807	2.24	73.44	una	19	19	STR		
184.4	185.62	1.22	0.98	80.3278	0.82	67.21	una	12	12	STR		
185.62	187.36	1.74	1.49	85.6319	0.73	41.95	sli	22	22	STR		
187.36	189.28	1.92	1.44	75.0001	0.85	44.27	sli	16	16	STR		
189.28	191.72	2.44	1.27	52.0491	0.21	8.61	sof	50	50	STR		

GeoSpark Logger Print Logs ~ Geotechnical

Hole ID: **ORO13-03**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
191.72	193.55	1.83	1.48	80.8742	0.68	37.16	sof	24	24	STR		
193.55	196.29	2.74	1.82	66.4236	0.9	32.85	sli	28	28	STR		
196.29	198.73	2.44	2.46	100.82	1.4	57.38	sli	12	12	STR		
198.73	200.55	1.82	1.49	81.8678	0.88	48.35	sli	20	20	STR		
200.55	203	2.45	1.94	79.1838	1.15	46.94	sli	10	10	STR		
203	204.52	1.52	0.87	57.2367	0.17	11.18	sof	25	25	STR		
204.52	205.74	1.22	0.92	75.4098	0.62	50.82	una	10	10	STR		
205.74	208.79	3.05	2.68	87.8692	1.36	44.59	una	22	22	STR		
208.79	211.23	2.44	2.12	86.8852	1.32	54.1	sli	13	13	STR		
211.23	214.27	3.04	2.7	88.8155	1.83	60.2	una	11	11	STR		
214.27	215.19	0.92	0.37	40.2175	0	0	una	10	10	STR		
215.19	216.41	1.22	1.1	90.1638	0.5	40.98	una	16	16	STR		
216.41	217.63	1.22	0.45	36.8852	0	0	sof	10	10	SFT		
217.63	219.76	2.13	1.89	88.7328	1.08	50.7	sof	25	25	SFT		
219.76	222.81	3.05	3.07	100.656	2.83	92.79	una	8	8	STR		
222.81	225.24	2.43	2.07	85.1849	1.36	55.97	una	10	10	STR		
225.24	228.3	3.06	2.85	93.1373	2.57	83.99	una	10	10	STR		
228.3	231.03	2.73	2.45	89.7437	1.7	62.27	sof	14	14	STR		
231.03	232.56	1.53	1.18	77.1242	0.27	17.65	sof	20	20	STR		
232.56	234.39	1.83	1.76	96.1748	1.27	69.4	sli	7	7	STR		
234.39	237.43	3.04	2.57	84.5397	1.96	64.47	sli	25	25	STR		
237.43	239.87	2.44	2.54	104.098	1.72	70.49	una	23	23	STR		
239.87	242.92	3.05	2.91	95.4097	2.54	83.28	sli	12	12	STR		
242.92	245.97	3.05	2.88	94.4261	2.75	90.16	una	6	6	STR		
245.97	249.02	3.05	2.87	94.0983	2.79	91.48	una	8	8	STR		
249.02	252.07	3.05	2.9	95.0819	1.97	64.59	sof	10	10	STR		
252.07	254.5	2.43	2.09	86.0085	1.39	57.2	sli	12	12	STR		
254.5	257.55	3.05	2.59	84.9184	2.02	66.23	sli	14	14	STR		
257.55	260.6	3.05	2.74	89.8355	0.99	32.46	sof	25	25	STR		
260.6	263.65	3.05	2.71	88.8528	2.06	67.54	sli	15	15	STR		
263.65	264.87	1.22	0.83	68.0327	0.14	11.48	sli	15	15	STR		
264.87	265.18	0.31	0.3	96.775	0	0	sli	25	25	STR		
265.18	267	1.82	1.07	58.791	0.33	18.13	sof	27	27	STR		

GeoSpark Logger Print Logs ~ Mag Susceptibility

DataSet: ORO_GF

Hole ID: ORO13-03

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
10.36	12	1.64	-0.022	0.07	0.037	0.028		TimS	30/07/2013	
12	14	2	-0.019	0.115	0.034	0.043		TimS	30/07/2013	
14	16	2	0.03	0	0.061	0.03		TimS	30/07/2013	
16	18	2	0.012	-0.05	0.212	0.058		TimS	30/07/2013	
18	20	2	0.533	0.007	0.041	0.194		TimS	30/07/2013	
20	22	2	-0.068	0.052	-0.021	-0.012		TimS	30/07/2013	
22	24	2	0.007	0.241	0.145	0.131		TimS	30/07/2013	
24	25.6	1.6	0.02	-0.015	-0.316	-0.104		TimS	30/07/2013	
25.6	28	2.4	-0.002	-0.013	0.021	0.002		TimS	30/07/2013	
28	30	2	0.055	0.011	-0.001	0.022		TimS	30/07/2013	
30	32	2	0.02	0.006	0.072	0.033		TimS	30/07/2013	
32	34	2	0.003	0.04	0.042	0.028		TimS	30/07/2013	
34	36	2	0.007	0.016	0.056	0.026		TimS	30/07/2013	
36	38	2	0.025	0.049	0.017	0.03		TimS	30/07/2013	
38	40	2	0.03	0.003	-0.001	0.011		TimS	30/07/2013	
40	42	2	0.008	0.177	0.067	0.084		TimS	30/07/2013	
42	44	2	1.06	0.144	-0.06	0.381		TimS	30/07/2013	
44	46	2	-0.14	-0.36	-0.12	-0.207		TimS	30/07/2013	
46	47.45	1.45	0.077	0.029	0.02	0.042		TimS	30/07/2013	
47.45	49.14	1.69	-0.004	0.004	0.06	0.02		TimS	30/07/2013	
49.14	51	1.86	0.178	-0.01	-0.03	0.046		TimS	30/07/2013	
51	53	2	-0.24	0.013	0.014	-0.071		TimS	30/07/2013	
53	55	2	0.03	-0.19	0.013	-0.049		TimS	30/07/2013	
55	57	2	0.008	0.03	-0.026	0.004		TimS	30/07/2013	
57	59	2	0.039	0	0.016	0.018		TimS	30/07/2013	
59	61	2	-0.036	0.154	-0.003	0.038		TimS	30/07/2013	
61	63	2	0.016	0.021	0.076	0.038		TimS	30/07/2013	
63	65	2	0.021	-0.121	0.019	-0.027		TimS	30/07/2013	
65	67	2	0.002	-0.011	0.055	0.015		TimS	30/07/2013	
67	69	2	0.03	0.004	0.04	0.025		TimS	30/07/2013	
69	71	2	0.006	0.026	0.047	0.026		TimS	30/07/2013	
71	73	2	0.01	0.081	0.018	0.036		TimS	30/07/2013	
73	75	2	0.03	0.007	0.17	0.069		TimS	30/07/2013	
75	77	2	0.022	0.107	0.918	0.349		TimS	30/07/2013	
77	79	2	0.046	0.038	0.034	0.039		TimS	30/07/2013	
79	81	2	0.183	0.017	0.038	0.079		TimS	30/07/2013	
81	81.89	0.89	0.077	0.126	1.78	0.661		TimS	30/07/2013	

GOLD FIELDS

GeoSpark Logger Print Logs ~ Mag Susceptibility

Hole ID: **ORO13-03**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
81.89	83	1.11	1.64	1.81	0.886	1.445		TimS	30/07/2013	
83	85.39	2.39	0.13	0.428	0.181	0.246		TimS	30/07/2013	
85.39	87	1.61	0.178	0.037	0.007	0.074		TimS	30/07/2013	
87	89	2	0.004	0.052	0.052	0.036		TimS	30/07/2013	
89	91.24	2.24	0.278	0.016	0.009	0.101		TimS	30/07/2013	
91.24	93	1.76	0.042	0.1	0.057	0.066		TimS	30/07/2013	
93	95	2	0.075	0.126	0.071	0.091		TimS	30/07/2013	
95	96.2	1.2	0.018	0.254	0.215	0.162		TimS	30/07/2013	
96.2	98	1.8	101	0.108	0.046	33.718		TimS	30/07/2013	
98	100	2	0.025	0.134	0.142	0.1		TimS	30/07/2013	
100	102	2	0.155	0.792	0.383	0.443				
102	104	2	0.224	0.032	0.038	0.098				
104	105	1	-0.001	0.134	0.079	0.071				
105	106.84	1.84	0.042	0.531	0.219	0.264				
106.84	108.68	1.84	3.12	0.163	2.23	1.838				
108.68	110	1.32	0.08	0.159	0.02	0.086				
110	112	2	0.003	0.043	0.039	0.028				
112	114	2	0.838	0.042	0.027	0.302				
114	116	2	0.225	0.152	0.023	0.133				
116	118	2	0.014	0.015	0.283	0.104				
118	119.1	1.1	0.441	0.017	0.285	0.248				
119.1	120	0.9	3.64	3	3.27	3.303				
120	122	2	3.04	2.04	3.15	2.743				
122	124	2	2.69	0.157	2.28	1.709				
124	126	2	2.91	2.38	2.87	2.72				
126	126.84	0.84	2.77	2.37	1.34	2.16				
126.84	129	2.16	0.158	0.025	0.158	0.114				
129	131	2	0.016	0.016	0.848	0.293				
131	133	2	0.485	0.875	0.021	0.46				
133	134.43	1.43	1.4	0.007	0.277	0.561				
134.43	136	1.57	2.31	3.29	2.91	2.837				
136	138	2	0.137	0.023	0.163	0.108				
138	139.01	1.01	-0.171	0.23	0.231	0.097				
139.01	141	1.99	3.05	2.83	3.08	2.987				
141	143.09	2.09	2.17	1.72	2.21	2.033				
143.09	144.42	1.33	0.16	2.16	2.82	1.713				
144.42	146	1.58	1.69	0.531	2.43	1.55				
146	147	1	2.92	2.34	3.12	2.793				
147	148.83	1.83	2.82	2.24	3.01	2.69				

GeoSpark Logger Print Logs ~ Mag Susceptibility

Hole ID: **ORO13-03**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
148.83	151	2.17	0.079	0.14	0.011	0.077				
151	153	2	0.155	0.07	0.397	0.207				
153	154	1	0.079	0.023	0.163	0.088				
154	155.73	1.73	-0.029	0.418	0.177	0.189				
155.73	156.82	1.09	0.373	0.08	0.138	0.197				
156.82	159	2.18	0.034	0.001	0.034	0.023				
159	161	2	0.234	0.12	0.115	0.156				
161	163	2	0.475	0.043	0.017	0.178				
163	165	2	0.019	0.279	-0.921	-0.208				
165	167	2	0.042	-0.215	0.089	-0.028				
167	167.86	0.86	0.137	0.16	0.461	0.253				
167.86	169.15	1.29	3.58	3.48	2.76	3.273				
169.15	171	1.85	0.019	0.122	0.055	0.065				
171	173	2	0.88	0.195	0.193	0.423				
173	175	2	0.08	0.23	0.25	0.187				
175	177	2	0.351	0.132	0.022	0.168				
177	179	2	0.099	-0.574	0.169	-0.102				
179	181	2	0.122	0.15	0.201	0.158				
181	182.54	1.54	0.921	0.135	-0.009	0.349				
182.54	184	1.46	0.017	1.4	0.357	0.591				
184	186	2	0.24	1	0.181	0.474				
186	188	2	0.115	0.212	0.269	0.199				
188	189.28	1.28	0.052	0.323	0.183	0.186				
189.28	191	1.72	0.116	0.5	0.362	0.326				
191	193	2	-0.928	0.107	-0.009	-0.277				
193	195	2	-0.01	0.15	0.327	0.156				
195	197	2	0.381	0.172	0.084	0.212				
197	199	2	0.29	-0.079	0.051	0.087				
199	200.08	1.08	0.134	0.128	0.148	0.137				
200.08	201.3	1.22	2.5	1.85	3.28	2.543				
201.3	203	1.7	0.211	2.52	2.36	1.697				
203	204.58	1.58	2.42	0.081	0.032	0.844				
204.58	205.38	0.8	0.674	2.49	2.76	1.975				
205.38	207	1.62	0.23	0.146	0.033	0.136				
207	209	2	2.43	0.421	0.045	0.965				
209	211	2	0.54	0.198	0.043	0.26				
211	213	2	0.111	0.557	0.153	0.274				
213	215	2	0.036	0.109	0.051	0.065				
215	217	2	0.139	0.164	0.129	0.144				

Hole ID: **ORO13-03**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
217	219	2	2.29	0.022	0.202	0.838				
219	221	2	0.148	0.297	0.647	0.364				
221	223	2	0.041	0.026	0.062	0.043				
223	225	2	0.023	0.039	0.286	0.116				
225	227	2	0.042	0.993	0.159	0.398				
227	229	2	0.033	0.373	0.17	0.192				
229	231	2	0.132	0.045	0.128	0.102				
231	233	2	0.323	0.195	0.423	0.314				
233	235	2	0.048	0.021	0.12	0.063				
235	236.9	1.9	0.111	0.98	0.1	0.397				
236.9	238	1.1	0.165	0.024	0.472	0.22				
238	240	2	0.017	0.029	0.032	0.026				
240	242	2	0.021	0.142	0.292	0.152				
242	244	2	0	0.196	0.157	0.118				
244	246	2	0.144	0.087	-0.019	0.071				
246	248	2	0.13	-0.114	-0.961	-0.315				
248	250	2	0.022	-0.03	0.045	0.012				
250	252	2	0.249	0.117	0.016	0.127				
252	254	2	0.091	0.018	0.174	0.094				
254	256	2	0.037	0.471	0.51	0.339				
256	258	2	0.057	0.513	0.019	0.196				
258	260	2	0.005	0.287	0.047	0.113				
260	262	2	1.34	0.024	0.195	0.52				
262	263.97	1.97	-0.112	0.252	0.113	0.084				
263.97	264.9	0.93	0.122	0.026	0.616	0.255				
264.9	267	2.1	-0.002	0.04	0.005	0.014				

GeoSpark Logger Print Logs ~ DH Samples

DataSet: ORO_GF

Hole ID: ORO13-03

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
10.36	12	Q186106	HC	TimS	☐	
12	14	Q186107	HC	TimS	☐	
14	16	Q186108	HC	TimS	☐	
16	18	Q186109	HC	TimS	☑	
18	20	Q186111	HC	TimS	☐	
20	22	Q186112	HC	TimS	☑	
22	24	Q186113	HC	TimS	☐	
24	25.6	Q186114	HC	TimS	☐	
25.6	28	Q186115	HC	TimS	☐	
28	30	Q186116	HC	TimS	☐	
30	32	Q186117	HC	TimS	☐	
32	34	Q186118	HC	TimS	☐	
34	36	Q186119	HC	TimS	☐	
36	38	Q186121	HC	TimS	☐	
38	40	Q186122	HC	TimS	☐	
40	42	Q186123	HC	TimS	☐	
42	44	Q186124	HC	TimS	☐	
44	46	Q186125	HC	TimS	☐	
46	47.45	Q186126	HC	TimS	☐	
47.45	49.14	Q186127	HC	TimS	☐	
49.14	51	Q186128	HC	TimS	☐	
51	53	Q186129	HC	TimS	☐	
53	55	Q186131	HC	TimS	☐	
55	57	Q186132	HC	TimS	☑	
57	59	Q186133	HC	TimS	☐	
59	61	Q186134	HC	TimS	☑	
61	63	Q186136	HC	TimS	☐	
63	65	Q186137	HC	TimS	☐	
65	67	Q186138	HC	TimS	☐	
67	69	Q186139	HC	TimS	☐	
69	71	Q186141	HC	TimS	☐	
71	73	Q186142	HC	TimS	☐	
73	75	Q186143	HC	TimS	☐	
75	77	Q186144	HC	TimS	☐	
77	79	Q186145	HC	TimS	☐	
79	81	Q186146	HC	TimS	☐	
81	81.89	Q186147	HC	TimS	☑	

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: ORO13-03

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
81.89	83	Q186148	HC	TimS	☐	
83	85.39	Q186149	HC	TimS	☐	
85.39	87	Q186151	HC	TimS	☐	
87	89	Q186152	HC	TimS	☐	
89	91.24	Q186153	HC	TimS	☐	
91.24	93	Q186154	HC	TimS	☑	
93	95	Q186155	HC	TimS	☐	
95	96.2	Q186156	HC	TimS	☐	
96.2	98	Q186157	HC	TimS	☐	
98	100	Q186158	HC	TimS	☐	
100	102	Q186159	HC	Svan	☑	
102	104	Q186161	HC	Svan	☐	
104	105	Q186162	HC	Svan	☑	
105	106.84	Q186164	HC	Svan	☐	
106.84	108.69	Q186165	HC	Svan	☐	
108.69	110	Q186166	HC	Svan	☐	
110	112	Q186167	HC	Svan	☐	
112	114	Q186168	HC	Svan	☐	
114	116	Q186169	HC	Svan	☐	
116	118	Q186171	HC	Svan	☐	
118	119.1	Q186172	HC	Svan	☐	
119.1	120	Q186173	HC	Svan	☐	
120	122	Q186174	HC	Svan	☐	
122	124	Q186175	HC	Svan	☐	
124	126	Q186176	HC	Svan	☐	
126	126.84	Q186177	HC	Svan	☐	
126.84	129	Q186178	HC	Svan	☐	
129	131	Q186179	HC	Svan	☐	
131	133	Q186181	HC	Svan	☐	
133	134.43	Q186182	HC	Svan	☐	
134.43	136	Q186183	HC	Svan	☐	
136	138	Q186184	HC	Svan	☐	
138	139.01	Q186185	HC	Svan	☐	
139.01	141	Q186186	HC	Svan	☐	
141	143.09	Q186187	HC	Svan	☐	
143.09	144.42	Q186188	HC	Svan	☐	
144.42	146	Q186189	HC	Svan	☐	
146	147	Q186191	HC	Svan	☑	
147	148.83	Q186193	HC	Svan	☐	

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: ORO13-03

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
148.83	151	Q186194	HC	Svan	☐	
151	153	Q186195	HC	Svan	☐	
153	154	Q186196	HC	Svan	☐	
154	155.73	Q186197	HC	Svan	☐	
155.73	156.82	Q186198	HC	Svan	☐	
156.82	159	Q186199	HC	Svan	☐	
159	161	Q186201	HC	Svan	☐	
161	163	Q186202	HC	Svan	☐	
163	165	Q186203	HC	Svan	☐	
165	167	Q186204	HC	Svan	☑	
167	167.86	Q186205	HC	Svan	☐	
167.86	169.15	Q186206	HC	Svan	☐	
169.15	171	Q186207	HC	Svan	☐	
171	173	Q186208	HC	Svan	☐	
173	175	Q186209	HC	Svan	☐	
175	177	Q186211	HC	Svan	☐	
177	179	Q186212	HC	Svan	☑	
179	181	Q186213	HC	Svan	☐	
181	182.54	Q186214	HC	Svan	☐	
182.54	184	Q186215	HC	Svan	☐	
184	186	Q186216	HC	Svan	☐	
186	188	Q186217	HC	Svan	☐	
188	189.28	Q186218	HC	Svan	☐	
189.28	191	Q186219	HC	Svan	☐	
191	193	Q186221	HC	Svan	☐	
193	195	Q186222	HC	Svan	☐	
195	197	Q186223	HC	Svan	☐	
197	199	Q186224	HC	Svan	☐	
199	200.08	Q186225	HC	Svan	☐	
200.08	201.3	Q186226	HC	Svan	☑	
201.3	203	Q186228	HC	Svan	☐	
203	204.58	Q186229	HC	Svan	☐	
204.58	205.38	Q186231	HC	Svan	☐	
205.38	207	Q186232	HC	Svan	☑	
207	209	Q186233	HC	Svan	☐	
209	211	Q186234	HC	Svan	☐	
211	213	Q186235	HC	Svan	☐	
213	215	Q186236	HC	Svan	☐	
215	217	Q186237	HC	Svan	☐	

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-03**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
217	219	Q186238	HC	Svan	☐	
219	221	Q186239	HC	Svan	☐	
221	223	Q186241	HC	Svan	☐	
223	225	Q186242	HC	Svan	☐	
225	227	Q186243	HC	Svan	☐	
227	229	Q186244	HC	Svan	☐	
229	231	Q186245	HC	Svan	☐	
231	233	Q186246	HC	Svan	☐	
233	235	Q186247	HC	Svan	☐	
235	236.9	Q186248	HC	Svan	☐	
236.9	238	Q186249	HC	Svan	☐	
238	240	Q186251	HC	Svan	☐	
240	242	Q186252	HC	Svan	☐	
242	244	Q186253	HC	Svan	☐	
244	246	Q186254	HC	Svan	☐	
246	248	Q186255	HC	Svan	☑	
248	250	Q186257	HC	Svan	☐	
250	252	Q186258	HC	Svan	☐	
252	254	Q186259	HC	Svan	☐	
254	256	Q186261	HC	Svan	☐	
256	258	Q186262	HC	Svan	☐	
258	260	Q186263	HC	Svan	☐	
260	262	Q186264	HC	Svan	☐	
262	263.97	Q186265	HC	Svan	☑	
263.97	264.9	Q186266	HC	Svan	☐	
264.9	267	Q186267	HC	Svan	☐	

GeoSpark Logger Print Logs ~ Duplicate Samples

DataSet: **ORO_GF**

Hole ID: **ORO13-03**

From (m)	To (m)	Sample ID	Original Sample ID	QC Category	Comments
16	18	Ch:Q186109	Q186109	LABCHCK	
20	22	Ch:Q186112	Q186112	LABCHCK	
55	57	Ch:Q186132	Q186132	LABCHCK	
59	61	Q186135	Q186134	FD	
81	81.89	Ch:Q186147	Q186147	LABCHCK	
91.24	93	Ch:Q186154	Q186154	LABCHCK	
100	102	Pd:Q186159	Q186159	PREPCHK	
104	105	Q186163	Q186162	FD	
146	147	Q186192	Q186191	FD	
146	147	Ch:Q186192	Q186192	LABCHCK	
165	167	Ch:Q186204	Q186204	LABCHCK	
177	179	Ch:Q186212	Q186212	LABCHCK	
177	179	Pd:Q186212	Q186212	PREPCHK	
200.08	201.3	Q186227	Q186226	FD	
205.38	207	Ch:Q186232	Q186232	LABCHCK	
246	248	Q186256	Q186255	FD	
262	263.97	Pd:Q186265	Q186265	PREPCHK	

GeoSpark Logger Print Logs ~ Standards / Blanks

DataSet: ORO_GF

Hole ID: ORO13-03

Sample ID	Standard ID	Comments
Q186110	FB	
Q186120	CDN-GS-5L	
Q186130	FB	
Q186140	CDN-GS-5L	
Q186150	FB	
Q186160	CDN-GS-5L	
Q186170	FB	
Q186180	CDN-GS-5L	
Q186190	FB	
Q186200	CDN-GS-5L	
Q186210	FB	
Q186220	CDN-GS-P6	
Q186230	FB	
Q186240	CDN-GS-5L	
Q186250	FB	
Q186260	CDN-GS-P6	

Gold Fields Selwyn – Quicklog 2013

<table>
<tr><td>Hole no: ORO13-04
Logged By: Tim Stubley</td><td>Az: 320</td><td>Dip:
-50</td><td>Target depth:
250 m</td><td colspan="2">EOH: 228.6 m</td></tr>
<tr><td>Start date:
August 01, 2013</td><td>End date:
August 04, 2013</td><td>Pad:
ORO13-Q</td><td>E:
396906</td><td>N:
7022328</td><td>Elevation:
1760 m</td></tr>
<tr><td colspan="3">Target:
Tests eastern portion of Anomaly 3 geochem target defined by high Au soils plus multi trace element (As, Sb, Hg) association. Anomalous high Au in quartzite rock samples. Designed to intersect quartzite/limestone contact in possible structural dilation zone.</td><td colspan="3">Target explained?
Faulted limestone/quartzite contact was intersected at ~112 m depth. Dissolution texture and presence of realgar/orpiment in strongly altered quartzite are encouraging signs for a possible gold host, and may explain the anomaly at surface.</td></tr>
<tr><td colspan="6">Summary:
Location: Eastern flank of the Limey Ridge Summit.
Lithology: Overburden to 5.18. ORO13-04 cuts through a thickly interbedded succession of thinly laminated to massive shales and thinly bedded to massive limestone. Graded fining downwards beds ± rip-up clasts occur consistently throughout the succession to a strongly faulted (112m), contact against massive to locally graded medium grained quartzite and minor shale interbeds that extends to EOH at 228.6 m.
Alteration: Fracture controlled FeOx coats surfaces and pervades shears (±clay) throughout the limestone and shale from 5.18 – 116.8m. An increase in pervasive and dissolution fracture controlled FeOx alteration occurs in massive vuggy quartzites from 116.8 – 191.9. From 191.9 m, possibly associated with sheared interbeds of shale, scorodite/orpiment and realgar ±hematite occur on fractures, along cleavage in shales, and locally as pervasive patchy discolouration of wall rock adjacent to fractures/dissolution surfaces.
Mineralization: Pyrite occurs as thin bands, nodules and fine disseminations in black shale and rarely as dissemination in quartzite.
Interpretation/Comments:
Graded bedding, local cross beds, rip up clasts and load structures indicate that younging is down- hole (to north) in steeply south dipping to vertical beds. Dissolution texture and presence of realgar/orpiment in strongly altered quartzite are good signs for a possible gold host, and may explain the anomaly at surface.</td></tr>
</table>

<table>
<tr><th>Shift</th><th>From</th><th>To</th><th>Comments</th></tr>
<tr><td rowspan="3">Aug 01/13
NS: 0-33.12</td><td>0</td><td>5.18</td><td>Overburden</td></tr>
<tr><td>5.18</td><td>11.58</td><td>Weathered black shale rubble (USh)
Black shale, highly weathered and clay altered. Abundant gouge; sections <30cm within rubble zone. Unmineralized.</td></tr>
<tr><td>11.58</td><td>13.45</td><td>Limestone (Ls)
White –grey medium – grained limestone with common fine grained to granule size mudstone clasts. Faulted upper and lower contacts ~35° tca. Local gouge- filled shears along <10cm shale interbeds ~20-60°tca. Abundant carbonate veins (<3mm, 10-80° tca, 50/m) form stockwork). Common stylolitic boundaries ~10-30°tca locally associated w/ trace pyrite.
FeOx alteration stains fracture planes.
Trace Py</td></tr>
</table>

	13.45	18.63	**Faulted carbonaceous shale (Ush)** Grey to black tectonised carbonaceous shale. Strong shear fabric ~30°tca, bedding ~20° tca. 2 cleavages; one bedding parallel and second orthogonal ~30°tca. Thin <1mm rare carbonate veins. Weak FeOx staining on fractures, pervasive clay alteration throughout.
	18.63	22.83	**Sulphitic carbonaceous shale; thin limestone interbeds (Ush)** Grey-black laminated shale with <3cm medium- grained limestone interbeds ~ 25°tca. 2 cleavages; one bedding parallel and second orthogonal ~30°tca. Pyrite occurs as semi- elongate nodules or fine grained dissemination along lamina. Weak FeOx along fracture planes. **Py~ 2%**
	22.83	27.96	**Graded pebbly to massive- fine grained limestone (Ls)** Grey – black to whitish limestone with local faulted shale interbeds.Top of interval is the base of bed (30°tca) containing rip-up clasts of shale grading downhole through coarse sand-size particles to massive fine-grained limestone, suggesting that bedding is overturned. Sequence repeats between 25.72 and 26m. Massive limestone contains abundant coarse sand to granule- size dark mudstone clasts and has local stylolitic boundaries paralleling bedding. Lower contact (faulted bedding parallel against shale) is decarbonatised and stained orange. Common carbonate veins orthogonal to bedding; truncate at contacts with shale. Strong FeOx alteration on fracture planes and vuggy throughout pebbly beds. Darker clasts commonly strongly Fe oxidised and may have weathered pyrite cores. **Py ~2%**
	27.96	29.45	**Laminated carbonaceous black shale (Shu)** Sheared contact into laminated black shale with single <2cm decarbonatised medium- grained limestone ~40°tca. Cleavage apparently parallel to bedding; second cleavage not evident. Local shearing. Moderate FeOx along bedding/cleavage planes. **Trace pyrite**
	29.45	54.35	**Massive Limestone (Ls)** Fine- grained to massive grey limestone with medium –sand to granule sized dark mudstone particles. Upper contact apparently conformable but sheared ~20°tca. Limestone is decarbonatised over ~20cm interval downhole from shale. Common carbonate veins, <1cm occur perpendicular to/truncated by sheared upper contact. Strong Feox staining along stylolites and fracture planes. **Trace disseminated pyrite**
Aug 02 - 03/13 DS/NS 33.12 –	54.35	57.36	**Bedded Limestone (Ls)** Fine to medium grained planar bedded limestone, common fluidic to angular dark mudstone clasts <1cm. Rare clasts contain <1mm carbonate veins and pyrite. Beds ~ 50°tca fine downhole. Stylolites

139.27			common at bed boundaries in finer- grained material. Strong FeOx growth on rough fracture surfaces associated with possible FeCarb alt. FeOx occurs in groundmass associated with common fine-grained disseminated pyrite. **Py ~1%**
	57.36	**62.84**	**Interbedded limestone (Ls) and sulphitic shale (USh)** Graded planar bedded limestone and laminated shale. Bed thickness ranges from <1cm to >20cm. Common faulting appears bedding parallel (~40-55°tca), as does cleavage. Carbonate veins cut across limestone beds perpendicular to bedding, but typically terminate against shale beds. Common pyrite lenses and nodules; common disseminated pyrite **Py ~3%**
	62.84	**73.9**	**Black sulphitic shale with sandy interbeds (Ush)** Interval dominated by massive competent mudstone/shale, but thin (non-reactive to Hcl) coarser –grained lenses occur locally. Common nodular and lamina- parallel lenses of pyrite<1cm. Fracture controlled FeOx staining, clay alteration in local faults. Rare undulating to planar beds ~45-60°tca. Local clay and rubble filled shears. **Py ~3%**
	73.9	**77**	**Interbedded limestone (Ls) and sulphitic shale (USh)** Graded planar bedded limestone and laminated shale. Bed thickness ranges from 1-40cm. Load structures and very fine-grained cross beds imply younging downhole. Very fine grained disseminated pyrite. **Py~2%**
	77	**77.6**	**Interbedded limestone (Ls) and sulphitic shale (USh with local carbonate +black sulphide? cemented breccia.** Graded planar bedded limestone and laminated shale. Bed thickness ranges from 1-40cm. Carbonate and black glossy to metallic cubic mineral –cemented jigsaw-fit breccia occurs between 77.10 and 76.45m within in a shale horizon. White carbonate rims clasts and breccia margins. **Black mineral ~10%, traces disseminated pyrite**
	77.6	**89.14**	**Interbedded sulphitic shale (USh) and limestone (Ls)** Planar bedded/laminated black shale with 'dirty' graded limestone interbeds up to 40cm. Strong Feox ±clay on fracture planes. Abundant <4mm pyrite nodules, rare <1cm pyrite beds, and fine-grained disseminated pyrite. **Py ~4%**
	89.14	**102.2**	**Massive limestone (Ls)** Massive textured medium- grained limestone with abundant black shale clasts <3mm. Carbonate veins <10mm, 35-50°tca, and <3mm ~15°tca, 6/m. Weak to moderate Feox staining on fracture planes.

			Trace disseminated pyrite.
	102.2	**105.76**	**Graded limestone (Ls) beds** Dirty clastic limestone with common discontinuous sulphitic shale interbeds; common black shale clasts. Weak fracture controlled FeOx. Carbonate veins < 2mm, 15-45°tca, 3/m. Common pyrite nodules, lamina and dissemination. **Py~2%**
	105.76	**112.2**	**Sulphitic black shale (USh)** Massive to laminated sulphitic black shale. Common pyrite nodules, lamina and dissemination. Local clast supported shale and minor limestone breccia with carbonate±pyrite infill. **Py~5%**
	112.2	**116.8**	**Faulted quartzite (Qzt)** Faulted contact into quartzite. Local clay and FeOx healed tectonite fabric ~50°tca. Strong fracture controlled and locally pervasive FeOx. Thin sheared shale interbeds <10cm. Common quartz veins <10mm, 15°tca, 3/m. Unmineralised
	116.8	**187.35**	**Massive quartzite (Qzt)** Massive whitish to red-brown quartzite with strongly red brown to black FeOx coated fracture surfaces. Heavily fractured; poor recovery. Local clay infill, (probably much washed away during drilling). Vuggy quartz veins <10mm, 15°tca, <3/m. Local FeOx healed fault breccia (?). Angular crystalline quartz fills cavities. Iridescent blue-green locally botryoidal mineral coats fractures. Unmineralised.
Aug 03/13 139.27-228.6m EOH	**187.35**	**191.9**	**Massive to weakly bedded quartzite (Qzt)** Massive to weakly bedded grey- white quartzite. Gradational transition from pervasive FeOx; moderate fracture controlled FeOx persists. Decreased dissolution texture along veins. Weakly bedded ~60°tca. Unmineralised
	191.9	**193**	**Massive - to - thinly bedded shale (USh)** Faulted upper contact. Black carbonaceous shale with local <2cm quartzite interbeds ~40° tca. Weak orpiment or scorodite forms yellow partial coating on fracture surfaces. Moderate FeOx coats fractures. No visible pyrite.
	193	**196**	**Quartzite (Qzt)** Massive to weakly bedded whitish quartzite. Common minor Fe oxidised gouge and rubble filled faults. Moderate orpiment/scorodite associated with FeOx? No visible pyrite

	196	**204**	**Thinly bedded carbonaceous shale (USh)** Black laminated shale with <30 cm interbeds of quartz sand oriented ~65°tca. Truncated cross bedded ripples imply younging downhole. Common minor faulting. Clay and FeOx coat fracture planes. Local pyrite as thin laminations and as fine grained dissemination. Weak local scorodite/orpiment on fracture surfaces. **Py ~1%**
	204	**214.1**	**Massive to thinly bedded quartzite (Qzt)** Massive grey- yellowish medium grained quartzite. Local thin beds defined by carbonaceous inter lamination, and minor sheared shale interbeds. Common dissolution texture creates vuggy quartz veins. Dark red-brown (?) realgar ± hematite alteration coats fractures and permeates locally into wallrock. Yellow orpiment/scorodite coats fractures and patchily permeates wallrock. Trace pyrite associated with shale beds.
	214.1	**221**	**Interbedded shale and quartzite (USh, Qzt)** Thinly laminated shale with quartzite interbeds <15 cm. Common shearing disrupts beds locally but bedding is oriented ~ 55° tca. Orpiment/scorodite and FeOx coat fractures. Minor disseminated and nodular pyrite. **Py ~1%**
	221	**224.7**	**Quartzite (Qzt)** Yellow-grey medium - grained quartzite. Common dissolution texture creates vuggy quartz veins. Dark red-brown (?) realgar ± hematite alteration coats fractures and permeates locally into wallrock. Unit terminates in fault.
	224.7	**227.38**	**Faulted quartzite and shale (Qzt, ShU)** Zone dominated by yellow gouge and rubble. Grades into shale dark grey shale with strong tectonic fabric ~25°tca. Strongly FeOx and clay altered. No visible mineralisation.
	227.38	**228.6**	**Quartzite rubble (Qzt)** Medium to fine- grained quartzite, almost chert at bottom. Fine grained sections appear less altered than quartzites up- hole. Hole caved in under fault, causing hole to be terminated.

GeoSpark Logger Print Logs ~ Collars

DataSet: **ORO_GF**

Depth (m)	Hole Type	Core Diamete	Grid ID	East	North	Elevation	Survey Method	Survey Date	Survey By	Date Started	Date Completed	Logged By	Prospect	Validated By
Hole: ORO13-04														
228.6 m	DD	HQ/NQ	UTM09N_NAD83	396906	7022328	1760	GPS	01/08/2013	RC	01/08/2013	04/08/2013	TimS	Limey Ridge	

Hole terminated at ~228.6m after drill lost return in faulted ground. See quicklog for detailed geology summary.

GeoSpark Logger Print Logs ~ DH Surveys

DataSet: ORO_GF

Hole ID: ORO13-04

Depth (m)	Survey Method	Grid ID	Dip	Surv. Tool Azimuth	Magnetic Declination	Corrected Azimuth	Magnetics	Date Surveyed	Survey Instrument	Bad Reading	Comments
0	COLL	UTM09N_NAD83	-50	320				02/08/2013	CMP	☐	
11.28	EZ Shot	UTM09N_NAD83	-50.8	297.2	22.5	319.7		02/08/2013	EZ	☐	
69.19	EZ Shot	UTM09N_NAD83	-51.3	296.4	22.5	318.9		02/08/2013	EZ	☐	
124.05	EZ Shot	UTM09N_NAD83	-51.9	296.2	22.5	318.7		05/08/2013	EZ	☐	
185.01	EZ Shot	UTM09N_NAD83	-50.6	296.8	22.5	319.3		05/08/2013	EZ	☐	
227.69	EZ Shot	UTM09N_NAD83	-51	297.8	22.5	320.3		03/08/2013	EZ	☐	

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DataSet: ORO_GF

Hole ID: ORO13-04

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	0	5.18	Overburden	Overburden (OB)	

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	5.18	11.58	Black Shale	undifferentiated shale	Black shale, highly weathered and clay altered. Abundant gouge; sections <30cm within rubble zone. Unmineralized.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	5.18	11.58	UnMin	0											

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	5.18	11.58	NoVeins	n/an/a											

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	5.18	11.58	FLTG	S	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	11.58	13.45	Siltstone - Calcarous	Limestone - nonspecific	Lt grey mg lst w/ comn fg -gran mudst clasts. Flt'd up and low cont ~35° tca. Carb vn stockwork: <3mm, 10-80° tca, 50/m. Comn stylolites ~10 -3o° assoc w/ trace py.

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DataSet: ORO_GF

Hole ID: ORO13-04

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
11.58	13.45	Py	0.1	DIS										

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
11.58	13.45	Vcal	n/a	25										Abundant carbonate veins (<5mm, 10-80° tca, 50/m) form stockwork).

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	13.45	18.63	Black Shale	undifferentiated shale	Grey to black tectonised carb shale. Strong shear fabric ~30°tca, bedding ~20° tca. 2 cleavages; one bed parallel and 2nd orthogonal ~30°tca. Weak FeOx staining on fractures, pervasive clay alteration throughout.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
13.45	18.63	UnMin	0											

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
13.45	18.63	FLTBX	S	30

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	18.63	22.83	Black Shale	undifferentiated shale	Grey-black lam shale with <3cm mg lst interbeds ~ 25°tca. 2 cleavages; one bed parallel and 2nd orthogonal ~30°tca.Pyrite occurs as semi-elongate nodules or fine grained dissemination along lamina. Weak FeOx along fracture planes. Py~ 2%

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DataSet: ORO_GF

Hole ID: ORO13-04

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
13.45	22.83	Vcarb	±clays	0.5										Wispy discontinuous carb veins in shales. Common carb veins in thin limestone units are perpendicular to shale bed contacts and shears

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
18.63	18.64	BED		25
21.85	21.86			15
21.86	21.87	FOL		30
21.87	21.88			15

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	22.83	27.96	Carbonate	Limestone - nonspecific	Gy-bk to whitish lst w/local flt'd shale intrbds. Beds ~30-40°tca grade downhole; bedding overturned. Comn granule black mst clasts th/out, occur as rip up pebbles at base. Decarb low cont sheared against shale.S frac con FeOx, ~2% Py.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
18.63	27.96	Py	2	PAT										Py occurs w/in stylolites, as fine grained dissemination, and possibly with FeOx alt; favoring dark mudstone clasts in pebbly limestone beds. Thin lamina and <1cm nodules of pyrite occur within shales.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
22.83	27.96	Vcal	n/a	1										Typically perpendicular to bedding/shears, and truncateon margins against shale. Poss interp-shales more ductile, limestones brittle and split by veins perp to bedding parallel shearing.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
22.83	23.25	BED		30
25.7	26			60
26	26.7	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	27.96	29.45	Black Shale	undifferentiated shale	Sheared contact into laminated black shale with single <2cm decarbonatised medium- grained limestone ~40°tca. Cleavage apparently parallel to bedding; second cleavage not evident. Local shearing. Moderate FeOx along bedding/cleavage planes.

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DataSet: ORO_GF

Hole ID: ORO13-04

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
27.96	29.45	Vcal	±clays	0.25										thin veins parallel to bedding

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
27.96	28.05	FLT		45

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	29.45	54.35	Carbonate	Limestone - nonspecific	Fg-mass grey lst w/mg to gran dk mst particles. Up contct conform but sheared and decarb ~20cm downhole fromshale. Comn carb vns, Mod- S FeOx stain along stlolites and frac planes; poss FeCarb alt.Trace dis Py

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
27.96	54.35	Py	0.25	DIS										Trace dissemianted pyrite

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
29.45	29.46	FLT		25
29.6	29.61			45
31.35	31.4			40
45.5	45.51	FRAC		
48.5	48.51			10

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	54.35	57.36	Carbonate	Limestone - nonspecific	Fg-mG plan bd (~50°tca) Ls, abun fluidic- angular dk mst clasts <1cm. Fining downhole. Stylolites at fg margins. S FeOx on irreg frac surface; poss FeCarb alt, both assoc w/ fg dis Py.

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DataSet: ORO_GF

Hole ID: ORO13-04

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
54.35	57.36	Py	1	DIS										FeOx occurs in groundmass associated with common fine- grained disseminated pyrite. Py ~1%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
29.45	57.36	Vcal	n/a	1										

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
56.25	57.36	BED		50

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	57.36	62.84	Black Shale	undifferentiated shale	Laminated shale w/ Lst interbeds <1cm - >20cm. Comn bed-parallel shears ~40-55°tca. Cleavage parallel to beds. Carb vns Xcut Ls butterminate against shale beds. Comn py lenses, thinly bedded and dis Py.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
57.36	62.84	Py	3	DIS										Common pyrite lenses and nodules; common disseminated pyrite Py ~3%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
58.85	58.86	BED		45
58.86	58.87	FOL		
61.26	61.6	FLT		
62	62.18			

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	62.84	73.9	Black Shale	undifferentiated shale	Mass shale w/ rare sandy (non- reactive) interbeds ~45-60°tca <3cm. FracCon FeOx stains, clay alt in local flts.Comn nodules and lamina parallel lens py <1cm.

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DataSet: ORO_GF

Hole ID: ORO13-04

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
62.84	73.9	Py	3	DIS										Common nodular and lamina- parallel lenses of pyrite<1cm.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
62.84	63.7	RUB		
70.45	70.5	FLTG		
70.9	71.25			

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	73.9	77	Carbonate	Limestone - nonspecific	Graded planar bedded limestone and laminated shale. Bed thickness ranges from 1-40cm. Load structures and very fine-grained cross beds imply younging downhole. Very fine grained disseminated pyrite. Py~2%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
73.9	77	Py	2	DIS										Very fine grained disseminated pyrite. Py~2%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
57.36	77	Vcal	n/a	1										

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
76.95	76.98	XBED		70

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	77.6	89.14	Black Shale	undifferentiated shale	Planar bedded/laminated black shale with ‘dirty’ graded limestone interbeds up to 40cm. Strong Feox ±clay on fracture planes. Abundant <4mm pyrite nodules, rare <1cm pyrite beds, and fine- grained disseminated pyrite.

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DataSet: ORO_GF

Hole ID: ORO13-04

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
77.6	89.14	Py	4	DIS										Abundant <4mm pyrite nodules, rare <1cm pyrite beds, and fine- grained disseminated pyrite. Py ~4%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
77.6	89.14	Vcarb	n/a	0.5										carb veins appear in limestone beds, perpendicular to bedding and locally terminated against shales.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
80.5	81.4	FLT		40
83	87.1	RUB		
88.4	88.41	FOL		15

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
77.6	89.14	Py	4	DIS										Abundant <4mm pyrite nodules, rare <1cm pyrite beds, and fine- grained disseminated pyrite. Py ~4%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
77.6	89.14	Vcarb	n/a	0.5										carb veins appear in limestone beds, perpendicular to bedding and locally terminated against shales.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
80.5	81.4	FLT		40
83	87.1	RUB		
88.4	88.41	FOL		15

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	89.14	102.2	Carbonate	Limestone - nonspecific	Massive textured medium- grained limestone with abundant black shale clasts <3mm. Carbonate veins <10mm, 35-50°tca, and <3mm ~15°tca, 6/m. Weak to moderate Feox staining on fracture planes. Trace disseminated pyrite.

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DataSet: ORO_GF

Hole ID: ORO13-04

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
89.14	102.2	Py	0.2	DIS										Trace disseminated pyrite.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
89.14	102.2	Vcarb	n/a	5										Carbonate veins <10mm, 35-50°tca, and <3mm ~15°tca, 6/m.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
91.2	91.21	FLT		40
100.5	100.6	FLTG		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	102.2	105.76	Carbonate	Limestone - nonspecific	Dirty clastic limestone with common discontinuous sulphitic shale interbeds; common black shale clasts. Weak fracture controlled FeOx. Carbonate veins < 2mm, 15-45°tca, 3/m. Common pyrite nodules, lamina and dissemination. Py~2%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
102.2	105.76	Py	2	PAT										Common pyrite nodules, lamina and dissemination. Py~2%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
102.2	105.76	Vcarb	n/a	0.6										Carbonate veins < 2mm, 15-45°tca, 3/m.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
102.2	102.7	BED		60

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	105.76	112.2	Black Shale	undifferentiated shale	Massive to laminated sulphitic black shale. Common pyrite nodules, lamina and dissemination. Local clast supported shale and minor limestone breccia with carbonate±pyrite infill. Py~5%

Gold Fields Canada **Signed: _______________**

DataSet: **ORO_GF**

Hole ID: **ORO13-04**

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
105.76	112.2	Py	5	MASS										. Common pyrite nodules, lamina and dissemination. Local clast supported shale and minor limestone breccia with carbonate±pyrite infill. Py~5%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
105.76	112.2	Vgyp	±carb	0.1										single occurrence: euhedral space-fill gypsum xtals on fracture surface.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	112.2	116.8	Sandstone	Quartzite - nonspecific	Faulted contact into quartzite. Local clay and FeOx healed tectonite fabric ~50°tca. Strong fracture controlled and locally pervasive FeOx. Thin sheared shale interbeds <10cm. Common quartz veins <10mm, 15°tca, 3/m.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
112.2	116.8	VQtz	±carb	3										Common quartz veins <10mm, 15°tca, 3/m.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
112.2	113.1	RUB		
114.5	115	BRX		40
116.5	119	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	116.8	187.35	Sandstone	Quartzite - nonspecific	Mass white-red qzt w/ strong red-brown-black FeOx coated fract. Heavily fract'd; poor recov. Local clay infill, (most washed away?) Local FeOx healed flt bx/vug w/ angular xtaln qtz.Iridescent blue-grn bortioidal min coats local frac. Manganese?

DataSet: ORO_GF

Hole ID: ORO13-04

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
112.2	187.35	UnMin	0											no visible mineralisation

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
116.8	187.35	VQtz	±py	3										Vuggy quartz veins <10mm, 15°tca, <3/m. Local FeOx+clay+Qtz healed fault breccia (?). Angular crystalline quartz fills cavities.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
126.4	135.6	RUB		
139.35	140.9			
140.9	141.25	FLT		
143.8	144.5	RUB		
149	152.4			
153.6	159.9		S	
159.9	159.95	FLTG		
160.6	161.7		S	
162	162.27	RUB		
162.9	167			
167	167.15	FLTBX		
170	171.7	RUB		
172.7	173.4			
174	175			
176.4	177.1			
178.87	179.5			
179.5	179.65	FLTG		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	187.35	191.9	Sandstone	Quartzite - nonspecific	Massive to weakly bedded grey- white quartzite. Gradational transition from pervasive FeOx; moderate fracture controlled FeOx persists. Decreased dissolution texture along veins. Weakly bedded ~60°tca.

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DataSet: ORO_GF

Hole ID: ORO13-04

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
187.35	191.1	VQtz	±clays	1										vuggy but less dissolutiion texture in veins than previously.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
191	192.2	RUB	S	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	191.9	193	Black Shale	undifferentiated shale	Faulted upper contact. Black carbonaceous shale with local <2cm quartzite interbeds ~40° tca. Weak orpiment or scorodite forms yellow partial coating on fracture surfaces. Moderate FeOx coats fractures.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
191.1	193	NoVeins	n/an/a											

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	193	196	Sandstone	Quartzite - nonspecific	Massive to weakly bedded whitish quartzite. Common minor Fe oxidised gouge and rubble filled faults. Moderate orpiment/scorodite associated with FeOx? No visible pyrite

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
187.35	196	UnMin	0											no visible sulphides

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
193	196	VQtz	n/a	0.5										

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
195.1	196	FLT	S	

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DataSet: ORO_GF

Hole ID: ORO13-04

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	196	204	Black Shale	undifferentiated shale	Black lam shale w/ <30cm qzt interbeds ~65°tca. Xbeds imply younging downhole. Comn minor flt, clay and FeOx coat frac surf. Local lam and dis py. Wk Sco/Orp on frac surf.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	196	204	Py	1	DIS										Local pyrite as thin laminations and as fine grained dissemination. Weak local scorodite/orpiment on fracture surfaces. Py ~1%

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	196	204	VQtz	±clays	0.25										rare veins locally replaced by clays

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	196.4	196.9	FLT	S	
	198.15	198.2	XBED		60

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	204	214.1	Sandstone	Quartzite - nonspecific	Mass- thnly bedded mg qzt. Minor sheared shale interbeds. Comn dissolution text; vuggy qtzveins. Dk red-brown realgar±hem coats frac; locally permeates wallrock. Yellow patchy frac con to locally pervasive. Orp/Sco. Tr Py assoc w/ shale interbeds.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	204	214.1	Py	0.1	DIS										Trace pyrite associated with shale beds.

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	204	214.1	VQtz	n/a	2										Common dissolution texture creates vuggy quartz veins.Commonly assoc w/ or contain realgar/orpiment, though realgar veins probably just mineral forming along dissolution boundary in wallrock

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	210.15	210.17	FLT	S	10

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DataSet: ORO_GF

Hole ID: ORO13-04

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	214.1	217.09	Black Shale	undifferentiated shale	Thinly laminated shale with quartzite interbeds <15 cm. Common shearing disrupts beds locally but bedding is oriented ~ 55° tca. Orpiment/scorodite and FeOx coat fractures. Minor disseminated pyrite Py ~1%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
214.1	221	Py	1	DIS										Minor disseminated and nodular pyrite. Py ~1%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
214.1	221	VQtz	±clays	0.2										veins typically only occur w/in the quartzite units

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
214.1	214.35	FLT	M	50
215.1	215.11	BED		55
215.11	217	FLT		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	217.09	224.7	Sandstone	Quartzite - nonspecific	Yellow-grey medium - grained quartzite. Common dissolution texture creates vuggy quartz veins. Dark red-brown (?) realgar ± hematite alteration coats fractures and permeates locally into wallrock. Unit terminates in fault.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
221	226.7	VQtz	±hem	2										vuggy quartz veins

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
218.75	219	BED		50
222.9	226.7	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	224.7	227.38	Fault Gouge	Fault (UT)	Zone dominated by yellow gouge and rubble. Grades into shale dark grey shale with strong tectonic fabric ~25°tca. Strongly FeOx and clay altered. No visible mineralisation.

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DataSet: ORO_GF

Hole ID: ORO13-04

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
226.7	227.38	FLTG		20

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	227.38	228.6	Sandstone	Quartzite - nonspecific	Medium to fine- grained quartzite, almost chert at bottom. Fine grained sections appear less altered than quartzites up- hole. Hole caved in under fault, causing hole to be terminated.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
221	228.6	UnMin	0											

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
226.7	228.6	NoVeins	n/an/a											

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
227.38	228.6	RUB		

GeoSpark Logger Print Logs ~ Geotechnical

DataSet: ORO_GF

Hole ID: ORO13-04

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
5.18	8.22	3.04	0.45	14.8026	0.16	5.26	sof	100	100	SFT	Black highly altered shale rubble	
8.22	10.82	2.6	0.94	36.1539	0.12	4.62	sof	100	100	SFT	Highly clay altered black shale rubble	
10.82	11.58	0.76	0.38	50	0.24	31.58	sof	100	100	SFT		
11.58	14.32	2.74	2.65	96.7153	1.95	71.17	sof	17	17	SFT		
14.32	17.37	3.05	2.74	89.8360	1.51	49.51	sof	60	60	VWK		
17.37	20.42	3.05	2.78	91.1476	1.65	54.1	mode	60	60	STR		
20.42	23.47	3.05	3.05	100	1.7	55.74	mode	60	60	STR		
23.47	26.21	2.74	1.95	71.1679	0.17	6.2	sli	100	100	VSTR	rubbly limestone	
26.21	26.97	0.76	0.7	92.1052	0	0	sli	60	60	VSTR		
26.97	28.04	1.07	0.89	83.1774	0	0	sli	15	15	VSTR		
28.04	30.17	2.13	2.14	100.47	1.28	60.09	sli	19	19	VSTR		
30.17	31.39	1.22	1.05	86.0656	0.32	26.23	sli	18	18	VSTR		
31.39	32	0.61	0.6	98.3606	0	0	sli	50	50	VSTR		
32	32.46	0.46	0.23	50.0001	0	0	sli	5	5	VSTR		
32.46	33.99	1.53	1.36	88.8887	0.31	20.26	non	29	29	VSTR		calcite/carbonate on some fracture suraces (vein parallel fracture
33.99	35.66	1.67	1.4	83.8324	0.28	16.77	sli	45	45	VSTR		
35.66	36.88	1.22	0.8	65.5737	0	0	sli	67	67	VSTR		
36.88	38.7	1.82	1.8	98.9011	0.37	20.33	sli	42	42	VSTR		
38.7	40.69	1.99	1.9	95.4775	0.46	23.12	sli	45	45	VSTR		
40.69	42.67	1.98	1.82	91.9192	0.38	19.19	non	58	58	VSTR		
42.67	43.59	0.92	0.76	82.6085	0	0	non	48	48	VSTR		
43.59	45.72	2.13	2.15	100.939	1.08	50.7	una	31	31	VSTR		
45.72	47.85	2.13	1.85	86.8546	0.61	28.64	una	26	26	VSTR		
47.85	49.37	1.52	1.25	82.2368	0	0	sli	58	58	VSTR		
49.37	50.6	1.23	1.27	103.252	0.21	17.07	sli	56	56	VSTR		
50.6	51.2	0.6	0.5	83.3330	0	0	sli	45	45	VSTR		
51.2	53.19	1.99	1.59	79.8996	0.13	6.53	sli	100	100	VSTR		
53.19	54.56	1.37	0.8	58.3940	0.13	9.49	sli	70	70	VSTR		
54.56	56.08	1.52	1.3	85.5263	0.72	47.37	sli	32	32	VSTR		
56.08	57	0.92	0.92	100.000	0.53	57.61	sli	73	73	VSTR		
57	58.52	1.52	1.18	77.6316	0.28	18.42	mode	60	60	STR		
58.52	60.05	1.53	1.1	71.8955	0.1	6.54	mode	100	100	STR		
60.05	60.96	0.91	0.77	84.6154	0	0	mode	100	100	STR		
60.96	61.26	0.3	0.17	56.6668	0	0	mode	6	6	STR		
61.26	62.18	0.92	0.82	89.1302	0	0	mode	100	100	STR		Borderline soft, clay dominated fracture surfaces, with minor sand and grit.

Hole ID: **ORO13-04**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
62.18	62.64	0.46	0.38	82.6089	0.1	21.74	mode	20	20	STR		
62.64	63.7	1.06	0.59	55.6603	0	0	mode	100	100	STR		
63.7	66.14	2.44	2.2	90.164	0.41	16.8	sli	100	100	STR		
66.14	67.97	1.83	1.46	79.7813	0.46	25.14	sli	34	34	STR		
67.97	69.19	1.22	1.13	92.6229	0.69	56.56	sli	11	11	STR		
69.19	71.32	2.13	1.7	79.8123	0.2	9.39	mode	100	100	STR		
71.32	74.37	3.05	2.32	76.0655	0.27	8.85	sli	100	100	STR		
74.37	75.29	0.92	0.72	78.2610	0.12	13.04	sli	43	43	STR		
75.29	77.88	2.59	2.44	94.2086	0.56	21.62	sli	100	100	STR		
77.88	78.49	0.61	0.68	111.475	0.36	59.02	una	28	28	STR		
78.49	81.38	2.89	2.06	71.2803	1.27	43.94	mode	85	85	STR		
81.38	83.82	2.44	1.83	74.9999	0.12	4.92	mode	100	100	STR		
83.82	86.11	2.29	0.34	14.8472	0	0	sof	100	100	VWK		
86.11	87.48	1.37	0.91	66.4232	0	0	mode	100	100	STR		
87.48	90.53	3.05	2.88	94.4264	1.21	39.67	sli	60	60	STR		
90.53	93.57	3.04	2.81	92.4342	1.29	42.43	sli	38	38	STR		
93.57	96.62	3.05	2.56	83.9343	1.02	33.44	sli	45	45	STR		
96.62	99.66	3.04	2.45	80.5921	0.66	21.71	sli	90	90	STR		
99.66	102.71	3.05	2.74	89.8362	1.56	51.15	sli	63	63	STR		
102.71	105.76	3.05	2.83	92.7868	1.91	62.62	sli	22	22	STR		
105.76	108.81	3.05	2.88	94.4264	0.75	24.59	una	55	55	STR		
108.81	111.86	3.05	2.84	93.1147	1.34	43.93	sli	75	75	STR		
111.86	113.95	2.09	1.27	60.7657	0.11	5.26	mode	100	100	STR		
113.95	117.04	3.09	2.29	74.1099	0.21	6.8	mode	100	100	STR		
117.04	118.87	1.83	1.27	69.3988	0.1	5.46	sli	100	100	STR		
118.87	121	2.13	1.75	82.1597	0.59	27.7	sli	44	44	STR		
121	124.05	3.05	2.48	81.3114	0.45	14.75	sli	100	100	STR		
124.05	127.1	3.05	2.73	89.5083	0.76	24.92	sli	100	100	STR		
127.1	128.47	1.37	0.88	64.2334	0	0	sli	100	100	STR		
128.47	131.06	2.59	1.56	60.2318	0	0	sli	100	100	STR		
131.06	133.19	2.13	1.29	60.5632	0	0	sli	100	100	STR		
133.19	133.8	0.61	0.52	85.2458	0	0	sli	100	100	STR		
133.8	135.02	1.22	0.88	72.1311	0	0	sli	100	100	STR		
135.02	136.24	1.22	1.08	88.5245	0.13	10.66	sli	100	100	STR		
136.24	139.29	3.05	2.72	89.1807	0.45	14.75	sli	100	100	STR		
139.29	141.73	2.44	1.79	73.3606	0	0	sli	100	100	STR		
141.73	144.47	2.74	2.37	86.4962	0.15	5.47	sli	100	100	STR		
144.47	147.52	3.05	2.42	79.3442	0.27	8.85	sli	100	100	STR		
147.52	150.57	3.05	1.97	64.5901	0	0	sli	100	100	STR		

Hole ID: **ORO13-04**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
150.57	153.61	3.04	2.43	79.9344	0	0	sli	100	100	STR		
153.61	156.66	3.05	2.67	87.5409	0	0	sli	100	100	STR		
156.66	157.58	0.92	0.68	73.9132	0	0	sli	50	50	STR		
157.58	160.32	2.74	1.57	57.2992	0.12	4.38	sli	100	100	STR		
160.32	162.15	1.83	1.62	88.5252	0	0	sli	100	100	STR		
162.15	163.67	1.52	1.04	68.4209	0	0	sli	100	100	STR		
163.67	166.72	3.05	2.18	71.4753	0.1	3.28	sli	100	100	STR		
166.72	168.55	1.83	1.66	90.7103	0.23	12.57	sli	100	100	STR		
168.55	169.77	1.22	1.17	95.9015	0	0	sli	100	100	STR		
169.77	172.82	3.05	2.16	70.8196	0	0	sli	100	100	STR		
172.82	175.86	3.04	1.68	55.2633	0	0	sli	100	100	STR		
175.86	178.91	3.05	2.13	69.836	0.19	6.23	sli	100	100	STR		
178.91	181.96	3.05	2.42	79.3442	0.28	9.18	sli	100	100	STR		
181.96	185.01	3.05	2.16	70.82	0.22	7.21	sli	100	100	STR		
185.01	188.06	3.05	2.79	91.4753	0.6	19.67	sli	69	69	STR		
188.06	191.1	3.04	2.29	75.3287	0.87	28.62	sli	100	100	STR		
191.1	192.02	0.92	0.37	40.2175	0	0	sli	75	75	STR		
192.02	193.85	1.83	1.54	84.1529	0.1	5.46	sli	67	67	STR		
193.85	196.9	3.05	1.93	63.2789	0.1	3.28	sli	100	100	STR		
196.9	199.94	3.04	2.69	88.4866	0.96	31.58	mode	100	100	STR		
199.94	202.99	3.05	2.63	86.2294	0.22	7.21	mode	100	100	STR		
202.99	205.43	2.44	1.73	70.9020	0.49	20.08	sli	100	100	STR		
205.43	206.34	0.91	0.91	99.9996	0.36	39.56	sli	34	34	STR		
206.34	209.39	3.05	2.56	83.9343	0.2	6.56	sli	100	100	STR		
209.39	212.44	3.05	2.2	72.1311	0.15	4.92	mode	100	100	STR		
212.44	215.48	3.04	2.42	79.6055	0.32	10.53	mode	100	100	STR		
215.48	218.54	3.06	2.85	93.1373	0.89	29.08	mode	77	77	STR		
218.54	221.54	3	2.58	86	0.27	9	mode	100	100	STR		
221.54	224.64	3.1	1.42	45.8064	0.13	4.19	sli	100	100	STR		
224.64	226.16	1.52	0.66	43.4209	0	0	sli	100	100	STR		
226.16	226.77	0.61	0.5	81.9671	0	0	mode	100	100	STR		
226.77	227.38	0.61	0.34	55.7377	0.1	16.39	mode	85	85	STR		
227.38	228.3	0.92	0.87	94.5654	0	0	sli	100	100	STR		
228.3	228.6	0.3	0.26	86.6658	0	0	sli	21	21	STR		EOH

GeoSpark Logger Print Logs ~ Mag Susceptibility

DataSet: ORO_GF

Hole ID: ORO13-04

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
5.18	8.22	3.04	0.143	0.087	0.072	0.101				
8.22	11.58	3.36	0.197	0.139	0.129	0.155		RC	02/08/2013	
11.58	13.45	1.87	0.034	0.099	0.049	0.061		RC	02/08/2013	
13.45	15	1.55	0.078	0.131	0.112	0.107		RC	02/08/2013	
15	17	2	0.135	0.378	0.064	0.192		RC	02/08/2013	
17	18.63	1.63	0.05	0.068	0.579	0.232		RC	02/08/2013	
18.63	20	1.37	0.118	0.224	0.067	0.136		RC	02/08/2013	
20	21	1	0.108	0.096	0.098	0.101		RC	02/08/2013	
21	22.83	1.83	0.087	0.125	0.085	0.099		RC	02/08/2013	
22.83	25	2.17	0.084	0.108	0.071	0.088		RC	02/08/2013	
25	27	2	0.075	0.097	0.228	0.133		RC	02/08/2013	
27	27.96	0.96	0.068	0.153	0.077	0.099		RC	02/08/2013	
27.96	29.45	1.49	0.077	0.124	0.234	0.145		RC	02/08/2013	
29.45	31	1.55	0.128	0.055	0.077	0.087		RC	02/08/2013	
31	33	2	0.054	0.001	0.088	0.048		Svan	03/08/2013	
33	35	2	0.088	0.136	0.138	0.121		Svan	03/08/2013	
35	37	2	0.072	0.096	0.148	0.105		Svan	03/08/2013	
37	39	2	0.073	0.117	0.117	0.102		Svan	03/08/2013	
39	41	2	0.115	0.047	0.058	0.073		Svan	03/08/2013	
41	43	2	0.065	0.076	0.116	0.086		Svan	03/08/2013	
43	45	2	0.122	0.118	0.044	0.095		Svan	03/08/2013	
45	47	2	0.093	0.09	0.071	0.085		Svan	03/08/2013	
47	49	2	0.071	0.102	0.251	0.141		Svan	03/08/2013	
49	51	2	0.082	0.027	0.064	0.058		Svan	03/08/2013	
51	53	2	0.247	0.063	0.175	0.162		Svan	03/08/2013	
53	54.35	1.35	0.069	0.121	0.075	0.088		Svan	03/08/2013	
54.35	56	1.65	0.103	0.059	0.247	0.136		Svan	03/08/2013	
56	57.36	1.36	0.206	0.049	0.068	0.108		Svan	03/08/2013	
57.36	59	1.64	0.144	0.276	0.145	0.188		Svan	03/08/2013	
59	61	2	0.03	0.115	-0.082	0.021		Svan	03/08/2013	
61	62.84	1.84	0.284	0.204	0.171	0.22		Svan	03/08/2013	
62.84	65	2.16	0.151	0.028	0.194	0.124		Svan	03/08/2013	
65	67	2	0.197	0.173	0.276	0.215		Svan	03/08/2013	
67	69	2	0.211	0.165	0.168	0.181		Svan	03/08/2013	
69	71	2	0.405	0.359	0.295	0.353		Svan	03/08/2013	
71	72	1	0.377	0.169	0.157	0.234		Svan	03/08/2013	
72	73.9	1.9	0.13	0.108	0.161	0.133		Svan	03/08/2013	

Hole ID: **ORO13-04**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
73.9	75	1.1	0.417	0.141	0.096	0.218		Svan	03/08/2013	
75	77	2	0.519	0.112	0.251	0.294		Svan	03/08/2013	
77	77.6	0.6	0.16	0.483	0.287	0.31		Svan	03/08/2013	
77.6	78.49	0.89	0.24	0.175	0.352	0.256		Svan	04/08/2013	
78.49	80	1.51	0.243	0.308	0.086	0.212		Svan	04/08/2013	
80	82	2	0.156	0.451	-0.01	0.199		Svan	04/08/2013	
82	84	2	0.27	0.518	0.773	0.52		Svan	04/08/2013	
84	87	3	0.138	0.332	0.094	0.188		Svan	04/08/2013	
87	89.14	2.14	0.117	0.165	0.177	0.153		Svan	04/08/2013	
89.14	91	1.86	0.217	-0.014	-0.024	0.06		Svan	04/08/2013	
91	93	2	0.314	0.024	0.084	0.141		Svan	04/08/2013	
93	95	2	0.093	0.953	0.272	0.439		Svan	04/08/2013	
95	97	2	0.543	0.043	0.259	0.282		Svan	04/08/2013	
97	99	2	0.727	0.093	0.129	0.316		Svan	04/08/2013	
99	101	2	0.205	0.98	1.03	0.738		Svan	04/08/2013	
101	102.2	1.2	0.139	0.654	0.146	0.313		Svan	04/08/2013	
102.2	104	1.8	0.104	0.097	0.002	0.068		Svan	04/08/2013	
104	105.76	1.76	0.124	0.436	0.154	0.238		Svan	04/08/2013	
105.76	108	2.24	0.25	0.408	0.226	0.295		Svan	04/08/2013	
108	110	2	0.112	0.289	0.17	0.19		Svan	04/08/2013	
110	112.2	2.2	0.141	0	0.143	0.095		Svan	04/08/2013	
112.2	114	1.8	-0.027	0.004	0.277	0.085		Svan	04/08/2013	
114	115	1	0.136	0.468	0.043	0.216		Svan	04/08/2013	
115	116.8	1.8	0.254	-0.004	-0.021	0.076		Svan	04/08/2013	
116.8	119	2.2	0.266	0.012	0.091	0.123		Svan	04/08/2013	
119	121	2	-0.01	-0.036	-0.041	-0.029		Svan	04/08/2013	
121	123	2	-0.931	0.753	-0.027	-0.068		Svan	04/08/2013	
123	125	2	-0.038	-0.053	-0.023	-0.038		Svan	04/08/2013	
125	127	2	-0.042	0.357	-0.038	0.092		Svan	04/08/2013	
127	129	2	-0.005	-0.023	0.356	0.109		Svan	04/08/2013	
129	131	2	-0.003	-0.014	-0.01	-0.009		Svan	04/08/2013	
131	133	2	0.186	0.021	0.197	0.135		Svan	04/08/2013	
133	135	2	0.037	0.02	0.019	0.025		Svan	04/08/2013	
135	137	2	0.012	0.024	0.048	0.028		Svan	04/08/2013	
137	139	2	0.011	0.002	0.002	0.005		Svan	04/08/2013	
139	141	2	0.004	0.047	0.137	0.063		Svan	04/08/2013	
141	143	2	0.587	0.313	-0.021	0.293		Svan	04/08/2013	
143	145	2	0.106	0.071	0.132	0.103		Svan	04/08/2013	
145	147	2	0.166	0.013	-0.027	0.051		Svan	04/08/2013	

Hole ID: **ORO13-04**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
147	149	2	-0.023	-0.006	0.635	0.202		Svan	04/08/2013	
149	151	2	0.193	0.308	0.009	0.17		Svan	04/08/2013	
151	153	2	-0.018	-0.023	0.062	0.007		Svan	04/08/2013	
153	155	2	0.011	0.108	0.027	0.049		Svan	04/08/2013	
155	157	2	-0.016	0.01	0	-0.002		Svan	04/08/2013	
157	159	2	0.007	0.071	0.548	0.209		Svan	04/08/2013	
159	161	2	0.016	-0.018	0.44	0.146		Svan	04/08/2013	
161	163	2	-0.005	0.045	0.019	0.02		Svan	04/08/2013	
163	165	2	-0.006	-0.008	-0.007	-0.007		Svan	04/08/2013	
165	167	2	-0.032	0.007	0.051	0.009		Svan	04/08/2013	
167	169	2	0.049	0.016	0.009	0.025		Svan	04/08/2013	
169	171	2	0.088	0.07	-0.009	0.05		Svan	04/08/2013	
171	173	2	0.001	0.042	-0.001	0.014		Svan	04/08/2013	
173	175	2	0.007	-0.013	-0.003	-0.003		Svan	04/08/2013	
175	177	2	0.326	-0.024	0.008	0.103		Svan	04/08/2013	
177	179	2	0.271	0.518	0.006	0.265		Svan	04/08/2013	
179	181	2	0.041	0.004	0.034	0.026		Svan	04/08/2013	
181	183	2	0.012	-0.005	-0.004	0.001		Svan	04/08/2013	
183	185	2	0.016	0.045	0.05	0.037		Svan	04/08/2013	
185	186	1	-0.015	0.001	-0.66	-0.225		Svan	04/08/2013	
186	187.35	1.35	0.242	0.037	0.065	0.115		Svan	04/08/2013	
187.35	189	1.65	0.002	-0.001	-0.492	-0.164		Svan	04/08/2013	
189	191.9	2.9	0.001	0.023	0	0.008		Svan	04/08/2013	
191.9	193	1.1	0.204	0.235	0.136	0.192		Svan	04/08/2013	
193	194	1	-0.009	-0.033	-0.017	-0.02		Svan	04/08/2013	
194	196	2	-0.011	0.002	0.399	0.13		Svan	04/08/2013	
196	198	2	0.3	0.042	0.002	0.115		Svan	04/08/2013	
198	200	2	0.223	0.049	0.023	0.098		Svan	04/08/2013	
200	202	2	0.234	0.178	0.107	0.173		Svan	04/08/2013	
202	204	2	0.045	0.048	0.011	0.035		Svan	04/08/2013	
204	206	2	0.015	0.205	0.195	0.138		Svan	04/08/2013	
206	208	2	0.165	0.132	0.1	0.132		Svan	04/08/2013	
208	210	2	0.085	0.111	0.305	0.167		Svan	04/08/2013	
210	212	2	0.006	0.007	0.013	0.009		Svan	04/08/2013	
212	214.1	2.1	0.027	0.007	0.055	0.03		Svan	04/08/2013	
214.1	216	1.9	0.721	0.049	0.049	0.273		Svan	04/08/2013	
216	218	2	0.361	0.489	0.144	0.331		Svan	04/08/2013	
218	219	1	0.139	0	0.039	0.059		Svan	05/08/2013	
219	221	2	0.202	0.049	-0.007	0.081		Svan	05/08/2013	

Hole ID: **ORO13-04**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
221	222.4	1.4	0.025	0.049	0.035	0.036		Svan	05/08/2013	
222.4	226.7	4.3	0.053	0.045	0.708	0.269		Svan	05/08/2013	
226.7	227.38	0.68	0.808	0.087	0.208	0.368		Svan	05/08/2013	
227.38	228.6	1.22	0.006	0.536	1.06	0.534		Svan	05/08/2013	EOH

DataSet: ORO_GF

Hole ID: ORO13-04

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
5.18	8.22	Q186268	HC	RC	☐	
8.22	11.58	Q186269	HC	RC	☐	
11.58	13.45	Q186271	HC	RC	☐	
13.45	15	Q186272	HC	RC	☐	
15	17	Q186273	HC	RC	☑	
17	18.63	Q186274	HC	RC	☐	
18.63	20	Q186275	HC	RC	☐	
20	21	Q186276	HC	RC	☐	
21	22.83	Q186277	HC	RC	☐	
22.83	25	Q186278	HC	RC	☑	
25	27	Q186279	HC	RC	☐	
27	27.96	Q186281	HC	RC	☐	
27.96	29.45	Q186282	HC	RC	☐	
29.45	31	Q186283	HC	RC	☐	
31	33	Q186284	HC	Svan	☑	
33	35	Q186286	HC	Svan	☐	
35	37	Q186287	HC	Svan	☐	
37	39	Q186288	HC	Svan	☐	
39	41	Q186289	HC	Svan	☐	
41	43	Q186291	HC	Svan	☐	
43	45	Q186292	HC	Svan	☐	
45	47	Q186293	HC	Svan	☐	
47	49	Q186294	HC	Svan	☐	
49	51	Q186295	HC	Svan	☐	
51	53	Q186296	HC	Svan	☐	
53	54.35	Q186297	HC	Svan	☐	
54.35	56	Q186298	HC	Svan	☐	
56	57.36	Q186299	HC	Svan	☐	
57.36	59	Q186301	HC	Svan	☐	
59	61	Q186302	HC	Svan	☐	
61	62.84	Q186303	HC	Svan	☐	
62.84	65	Q186304	HC	Svan	☐	
65	67	Q186305	HC	Svan	☐	
67	69	Q186306	HC	Svan	☐	
69	71	Q186307	HC	Svan	☐	
71	72	Q186308	HC	Svan	☐	
72	73.9	Q186309	HC	Svan	☑	

Hole ID: **ORO13-04**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
73.9	75	Q186311	HC	Svan	☑	
75	77	Q186313	HC	Svan	☐	
77	77.6	Q186314	HC	Svan	☐	
77.6	78.49	Q186315	HC	Svan	☐	
78.49	80	Q186316	HC	Svan	☑	
80	82	Q186317	HC	Svan	☐	
82	84	Q186318	HC	Svan	☐	
84	87	Q186319	HC	Svan	☐	
87	89.14	Q186321	HC	Svan	☑	
89.14	91	Q186322	HC	Svan	☐	
91	93	Q186323	HC	Svan	☐	
93	95	Q186324	HC	Svan	☐	
95	97	Q186325	HC	Svan	☐	
97	99	Q186326	HC	Svan	☐	
99	101	Q186327	HC	Svan	☐	
101	102.2	Q186328	HC	Svan	☐	
102.2	104	Q186329	HC	Svan	☐	
104	105.76	Q186331	HC	Svan	☐	
105.76	108	Q186332	HC	Svan	☐	
108	110	Q186333	HC	Svan	☐	
110	112.2	Q186334	HC	Svan	☐	
112.2	114	Q186335	HC	Svan	☐	
114	115	Q186336	HC	Svan	☑	
115	116.8	Q186337	HC	Svan	☐	
116.8	119	Q186338	HC	Svan	☑	
119	121	Q186341	HC	Svan	☐	
121	123	Q186342	HC	Svan	☐	
123	125	Q186343	HC	Svan	☐	
125	127	Q186344	HC	Svan	☐	
127	129	Q186345	HC	Svan	☑	
129	131	Q186346	HC	Svan	☐	
131	133	Q186347	HC	Svan	☐	
133	135	Q186348	HC	Svan	☐	
135	137	Q186349	HC	Svan	☐	
137	139	Q186351	HC	Svan	☐	
139	141	Q186352	HC	Svan	☐	
141	143	Q186353	HC	Svan	☐	
143	145	Q186354	HC	Svan	☐	
145	147	Q186355	HC	Svan	☐	

GOLD FIELDS

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-04**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
147	149	Q186356	HC	Svan	☑	
149	151	Q186357	HC	Svan	☐	
151	153	Q186358	HC	Svan	☐	
153	155	Q186359	HC	Svan	☐	
155	157	Q186361	HC	Svan	☐	
157	159	Q186362	HC	Svan	☐	
159	161	Q186363	HC	Svan	☐	
161	163	Q186364	HC	Svan	☐	
163	165	Q186365	HC	Svan	☑	
165	167	Q186367	HC	Svan	☐	
167	169	Q186368	HC	Svan	☐	
169	171	Q186369	HC	Svan	☐	
171	173	Q186371	HC	Svan	☐	
173	175	Q186372	HC	Svan	☐	
175	177	Q186373	HC	Svan	☑	
177	179	Q186374	HC	Svan	☐	
179	181	Q186375	HC	Svan	☐	
181	183	Q186376	HC	Svan	☐	
183	185	Q186377	HC	Svan	☐	
185	186	Q186378	HC	Svan	☐	
186	187.35	Q186379	HC	Svan	☐	
187.35	189	Q186381	HC	Svan	☐	
189	191.9	Q186382	HC	Svan	☐	
191.9	193	Q186383	HC	Svan	☐	
193	194	Q186384	HC	Svan	☐	
194	196	Q186385	HC	Svan	☐	
196	198	Q186386	HC	Svan	☐	
198	200	Q186387	HC	Svan	☑	
200	202	Q186388	HC	Svan	☐	
202	204	Q186389	HC	Svan	☐	
204	206	Q186391	HC	Svan	☐	
206	208	Q186392	HC	Svan	☐	
208	210	Q186393	HC	Svan	☐	
210	212	Q186394	HC	Svan	☑	
212	214.1	Q186395	HC	Svan	☐	
214.1	216	Q186396	HC	Svan	☐	
216	218	Q186397	HC	Svan	☑	
218	219	Q186399	HC	Svan	☐	
219	221	Q186401	HC	Svan	☐	

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-04**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
221	222.4	Q186402	HC	Svan	☐	
222.4	226.7	Q186403	HC	Svan	☐	
226.7	227.38	Q186404	HC	Svan	☐	
227.38	228.6	Q186405	HC	Svan	☐	EOH

GeoSpark Logger Print Logs ~ Duplicate Samples

DataSet: ORO_GF

Hole ID: ORO13-04

From (m)	To (m)	Sample ID	Original Sample ID	QC Category	Comments
15	17	Ch:Q186273	Q186273	LABCHCK	
22.83	25	Ch:Q186278	Q186278	LABCHCK	
31	33	Q186285	Q186284	FD	
72	73.9	Ch:Q186309	Q186309	LABCHCK	
73.9	75	Q186312	Q186311	FD	
78.49	80	Ch:Q186316	Q186316	LABCHCK	
87	89.14	Pd:Q186321	Q186321	PREPCHK	
114	115	Ch:Q186336	Q186336	LABCHCK	
116.8	119	Q186339	Q186338	FD	
127	129	Ch:Q186345	Q186345	LABCHCK	
147	149	Ch:Q186356	Q186356	LABCHCK	
163	165	Q186366	Q186365	FD	
175	177	Pd:Q186373	Q186373	PREPCHK	
198	200	Ch:Q186387	Q186387	LABCHCK	
210	212	Ch:Q186394	Q186394	LABCHCK	
216	218	Q186398	Q186397	FD	

GeoSpark Logger Print Logs ~ Standards / Blanks

DataSet: ORO_GF

Hole ID: ORO13-04

Sample ID	Standard ID	Comments
Q186270	FB	
Q186280	CDN-GS-5L	
Q186290	FB	
Q186300	CDN-CM-25	
Q186310	FB	
Q186320	CDN-GS-5L	
Q186330	FB	
Q186340	CDN-CM-25	
Q186350	FB	
Q186360	CDN-GS-5L	
Q186370	FB	
Q186380	CDN-CM-25	
Q186390	FB	
Q186400	CDN-GS-5L	

Gold Fields Selwyn – Quicklog 2013

<table>
<tr><td>Hole no: ORO13-05
Logged By:</td><td>Az: 050</td><td>Dip: -50</td><td>Target depth:
300</td><td colspan="2">EOH: 40.64m</td></tr>
<tr><td>Start date: August 4, 2013</td><td>End date: August 6, 2013</td><td>Pad: ORO13-N</td><td>E: 400850</td><td>N: : 7020585</td><td>Elevation:
1250 m</td></tr>
<tr><td colspan="3">Target: ORO13-05 is located approximately 500m NW of B88-17 within the Oro Main Zone.
ORO13-05 targets the intersection of the Caribou Pass Limestone and the Main Oro Fault zone, which was determined via surface mapping and analysis of generated cross-sections.
ORO13-05 will also test the high grade soil geochemistry polygon target.</td><td colspan="3">Target explained? NA-Hole was abandoned-unable to advance casing or rods. New pad location was selected to drill target at steeper plunge.</td></tr>
<tr><td colspan="6">Summary:
Location: North west of Main zone
Lithology: Variably graphitic shale throughout. Major fault zones.
Alteration: Variable weak to strong clay alteration associated with major fault zone.
Mineralization: Trace to locally weak pyrite.
Interpretation/Comments: Hole not drilled to sufficient depth to test targets.</td></tr>
</table>

Shift	**From**	**To**	**Comments**
Aug. 4 to 6, 2013. 0 to 40.64m. EOH.	**0**	**7.01**	**Overburden**
	7.01	**14.63**	**Graphitic Shale (ShU)**. Predominantly soft black mushy material. Lousy recovery. A few pieces of dark grey competent core with stockwork calcite veins. Trace very fine grain pyrite.
	14.63	**24.85**	**Graphitic Shale (ShU)**. Moderately to strongly fractured / broken core. Finely bedded. Strong calcite stockwork veining down to 20.72 m then diminishing. Most calcite veins conjugate to bedding/tension fractures. Bedding typically 15˚ to 20˚ tca. Very fine to fine disseminated pyrite, ~0.5% average to 3% locally. Two generations of pyrite: 1st generation is disseminated and along bedding, 2nd generation forms seams or veins and cross-cuts (i.e. is later than) calcite veins. Below 20.72 m increasingly fractured /broken and grading to rubble. Graphite is common on fractures but not "polished".
	24.85	**29.87**	**Fault zone (UT)**. **Graphitic Shale (ShU)**: mostly broken rubble. Increasingly graphitic with polished graphitic fractures and slip planes parallel to bedding. Local highly fissile fault gouge pieces suggest faulting sub-parallel tca. Fractures 10˚ to 40˚ tca. One core piece with bedding at 40˚ tca but all others at 20˚-25˚ tca. Fine grain disseminated pyrite, often euhedral averages ~0.5% but locally up to ~2%. Pyrite seam, 2 mm thick, at 24.75 m cross cuts calcite veins and parallels bedding at 23˚ tca.

	29.87	40.64	**Fault zone (UT)**. **Graphitic Shale (ShU).** Mostly unrecognizable lithology. Strong matrix dissolution and locally strong clay alteration destroyed all primary features. Generally soft and incompetent. High core loss. Local remnants of calcite stockwork veins. Fault zone consists of mainly clay alteration with angular rock chips down to 36.57 then mainly sandy gravel with only local clay to end of hole (40.64 m). @34.44 to 35.66 m: more competent pieces with bedding around 55˚ tca. Polished graphite fractures common. @35.0-25.20 m: up to 15% disseminated py in beds with thin (<1 cm) semi-massive py beds. @40.64 m; Hole abandoned due to caving and in ability to significantly advance hole.

GeoSpark Logger Print Logs ~ Collars

DataSet: **ORO_GF**

Depth (m)	Hole Type	Core Diamete	Grid ID	East	North	Elevation	Survey Method	Survey Date	Survey By	Date Started	Date Completed	Logged By	Prospect	Validated By
Hole: ORO13-05														
40.64 m	DD	HQ/NQ	UTM09N_NAD83	400850	7020585	1250	GPS	28/07/2013	TimS	04/08/2013	06/08/2013	RC	Main Zone	

DataSet: ORO_GF

Hole ID: ORO13-05

Depth (m)	Survey Method	Grid ID	Dip	Surv. Tool Azimuth	Magnetic Declination	Corrected Azimuth	Magnetics	Date Surveyed	Survey Instrument	Bad Reading	Comments
0	COLL	UTM09N_NAD83	-50	30	0	30		11/08/2013	CMP	☐	
30.48	EZ Shot	UTM09N_NAD83	-50.7	3	22.5	25.5		06/08/2013	EZ	☐	

Gold Fields Canada

Signed: ______________

DataSet: **ORO_GF**

Hole ID: **ORO13-05**

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	0	7.01	Overburden	Overburden (OB)	

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	7.01	14.63	Black Shale	undifferentiated shale	

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	7.01	14.63	Vcal	n/a	1										

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	14.63	24.85	Black Shale	undifferentiated shale	

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Signed: ______________

DataSet: ORO_GF

Hole ID: ORO13-05

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
14.63	20.72	Vcal	n/a	10										

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
16.6	16.7	BED		18
19.25	19.26			5
23.88	23.89			25
23.95	23.96			20
24.75	24.76			

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	24.85	29.87	Tectonic/Fault Rock - Undifferentiated	Fault (UT)	

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
7.01	35	Py	0.5	DIS										disseminated pyrite appears primary, within bedding, variably trace to locally up to 3%. A later generation of pyrite follows bedding contacts or forms seams sub-parallel to bedding and cross cuts calcite vein stockwork

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
20.72	29.87	Vcal	n/a	5										

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
28.4	28.41	BED		15
29.85	34.44	FLTG	S	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	29.87	40.64	Black Shale	undifferentiated shale	EOH

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Signed: ______________

DataSet: ORO_GF

Hole ID: ORO13-05

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
35	40.64	Py	0.1	DIS										Trace pyrite

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
29.87	40.64	NoVeins	n/a											

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
34.44	35.66	RUB		
35.66	40.64	FLT		

GeoSpark Logger Print Logs ~ Geotechnical

DataSet: ORO_GF

Hole ID: ORO13-05

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
7.01	8.53	1.52	0.08	5.26316	0	0	sof	2	2	SFT		
8.53	10.05	1.52	0.12	7.89473	0	0	sof	7	7	SFT		
10.05	11.58	1.53	0.15	9.80392	0	0	sof	20	20	SFT		
11.58	13.1	1.52	0.1	6.57895	0	0	sof	50	50	SFT		
13.1	14.63	1.53	0.4	26.1438	0	0	sof	100	100	SFT		
14.63	16.15	1.52	0.5	32.8948	0.15	9.87	sli	10	10	STR		
16.15	17.67	1.52	1.03	67.7631	0.1	6.58	sli	20	20	STR		
17.67	19.2	1.53	0.45	29.4118	0	0	sli	100	100	SFT		
19.2	20.72	1.52	0.23	15.1316	0.14	9.21	sli	7	7	STR		
20.72	22.25	1.53	0.15	9.80392	0	0	sli	30	30	STR		
22.25	23.77	1.52	0.39	25.6579	0	0	sli	100	100	STR		
23.77	24.68	0.91	0.73	80.2198	0	0	sli	50	50	STR		
24.68	25.29	0.61	0.45	73.7704	0.11	18.03	sli	55	55	STR		
25.29	26.82	1.53	0.3	19.6079	0	0	sof	80	80	SFT		
26.82	28.34	1.52	0.79	51.9737	0	0	sof	100	100	SFT		
28.34	29.87	1.53	0.34	22.2222	0	0	sof	50	50	SFT		
29.87	31.39	1.52	0.7	46.0527	0	0	sof	20	20	SFT		
31.39	32.92	1.53	0.53	34.6406	0	0	sof	100	100	SFT		
32.92	34.44	1.52	0.47	30.9210	0.1	6.58	sof	30	30	SFT		
34.44	35.66	1.22	0.42	34.4262	0	0	sof	50	50	STR		
35.66	36.57	0.91	0.54	59.3407	0	0	sof	100	100	SFT		
36.57	37.49	0.92	0.35	38.0434	0	0	sof	100	100	SFT		
37.49	38.1	0.61	0.3	49.1806	0	0	sof	100	100	SFT		
38.1	39.32	1.22	0.55	45.0819	0	0	sof	100	100	SFT		
39.32	40.54	1.22	1.5	122.951	0	0	sof	100	100	SFT		
40.54	40.64	0.1	0.1	100.002	0	0	sof	20	20	SFT		

GeoSpark Logger Print Logs ~ Mag Susceptibility

DataSet: ORO_GF

Hole ID: ORO13-05

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
7.1	13.1	6	0.11	0.188	0.028	0.109				
13.1	14.63	1.53	0.157	0.047	0.107	0.104				
14.63	17	2.37	0.128	0.248	0.228	0.201				
17	19.2	2.2	0.197	0.094	0.198	0.163				
19.2	22.25	3.05	0.795	0.011	0.047	0.284				
22.25	24	1.75	0.144	0.048	0.124	0.105				
24	24.85	0.85	0.19	0.124	0.032	0.115				
24.85	26.82	1.97	0.009	-0.035	0.014	-0.004				
26.82	29.87	3.05	0.187	0.022	0.085	0.098				
29.87	32	2.13	0.482	0.035	0.016	0.178				
32	35	3	0.137	0.037	0.024	0.066				
35	37	2	0.023	0.116	0.04	0.06				
37	39	2	0.03	1.42	1.41	0.953				
39	40.64	1.64	5.21	0.009	15.9	7.04				

GeoSpark Logger Print Logs ~ DH Samples

DataSet: ORO_GF

Hole ID: ORO13-05

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
7.01	13.1	Q186406	HC	RC	☐	
13.1	14.63	Q186407	HC	RC	☑	
14.63	17	Q186408	HC	RC	☐	
17	19.2	Q186409	HC	RC	☑	
19.2	22.25	Q186411	HC	RC	☐	
22.25	24	Q186412	HC	RC	☐	
24	24.85	Q186413	HC	RC	☐	
24.85	26.82	Q186414	HC	RC	☐	
26.82	29.87	Q186415	HC	RC	☐	
29.87	32	Q186416	HC	RC	☐	
32	35	Q186417	HC	RC	☐	
35	37	Q186418	HC	RC	☐	
37	39	Q186419	HC	RC	☐	
39	40.64	Q186421	HC	RC	☐	

GeoSpark Logger Print Logs ~ Duplicate Samples

DataSet: ORO_GF

Hole ID: ORO13-05

From (m)	To (m)	Sample ID	Original Sample ID	QC Category	Comments
13.1	14.63	Ch:Q186407	Q186407	LABCHCK	
17	19.2	Ch:Q186409	Q186409	LABCHCK	

GeoSpark Logger Print Logs ~ Standards / Blanks

DataSet: **ORO_GF**

Hole ID: **ORO13-05**

Sample ID	Standard ID	Comments
Q186410	FB	
Q186420	CDN-CM-25	

Gold Fields Selwyn – Quicklog ORO13-06, 2013

Hole no: ORO13-06 Logged By: SVan	Az: 040°	Dip: -60°	Target depth: 300	EOH: 359.97 m	
Start date: August 6, 2013	End date: August 10, 2013	Pad: ORO13-P	E: 400655	N: 7020122	Elevation: 1350 m
Target: ORO13-06 targets a soil geochemistry polygon with elevated Au, As, Hg, and Sb. This hole is designed to intersect the Canol Deformation Zone at depth, in addition to two quartz-plagioclase-phyric felsic dikes which display discrete sulphide mineralization deduced from surface mapping.			Target explained: This hole successfully intersected the targeted quartz-plagioclase-phyric felsic dykes at depth, in addition to intersecting a significant structural zone. This hole also observed arsenopyrite and potentially arsenate mineralization which could be related to the surface geochemical anomaly. There is also evidence for secondary pyrite in quartz veins and pyrite stringers.		
Summary: **Location:** ORO13-06 is located approximately 500 m to the southwest of the main zone and 500 m northwest of ORO13-01. **Lithology:** 16.49 m of overburden overlies highly weathered black carbonaceous shale intersected to a depth of 113.69 m, variably siliceous shale and graphitic shale with laminated beds and breccias of sandstone/quartzite was intersected to the end of whole at 359.97 m. These shales are intruded by several discrete quartz-plagioclase-phyric dikes up to 15 m in thickness. Several robust fault zones were intersected, in addition to nearly ubiquitous strong fracture networks below 124.66 m depth. **Alteration:** Fracture controlled limonite/goethite-FeOx alteration was observed in the top of the hole and within the upper quartz-plagioclase-phyric dikes; graphite, trace talc and an unidentified green mineral (Scorodite?) was observed dominating fracture surfaces at depth. Pyrite and arsenopyrite were observed replacing mafics in the felsic dykes. **Mineralization:** Pyrite was observed nearly ubiquitously throughout the hole; as laminations, nodules, lenses and disseminations in the shales and as fine grained disseminations and replacing mafics. It was also observed in trace pyrite stringer veins and as fine-grained aggregates in discrete quartz veins and vein breccias. Arsenopyrite was observed from 280.90 to 305.75 m with pyrite, replacing mafics in the felsic dike. **Interpretation/Comments:** This hole successfully intersected the targeted quartz-plagioclase-phyric felsic dykes at depth, in addition to intersecting a significant structural zone. This hole also observed arsenopyrite and potentially arsenate mineralization which could be related to the surface geochemical anomaly. There is also evidence for secondary pyrite in quartz veins and pyrite stringers.					

Shift	From	To	Comments
August 6-7, 2013 16.49 – 101.10 m	**0.00**	**16.49**	**Overburden**
	16.49	**59.13**	**Undifferentiated Carbonaceous Black Shale (ShU)** Highly weathered, very soft (indented by thumbnail) black shale with abundant core loss. Interval is comprised mainly of sand to pebble sized fragments of black shale and minor quartz vein fragments (< 3 cm, <3 %) supported in black clay/silt (gouge?). Discrete pervasive and fracture surface staining of FeOx and lim/goe. Local, minor graphite on rare fracture planes. Shale is very dark, and appears carbonaceous. Rare tabular shale fragments exhibit planar fabric; too

			small and fragmented to discern any further details. Unit appears permeable, visibly absorbing liquids. **No Visible Sulphides.**
	59.13	**62.30**	**No Core** No core was recovered.
	62.30	**66.20**	**Quartz-plagioclase-phyric Felsic Dyke (qpFd)** Light yellow-orange-buff, medium-grained felsic dyke with ~5% quartz eye phenocrysts (<5 mm) and abundant, highly weathered, feldspar phenocrysts (<7 mm) in a very fine grained, undifferentiated matrix. Feldspar phenocrysts are partially to completely replaced by clays and display weak hematite/FeOx staining. Moderate to strong, variably pervasive and strongly fracture controlled FeOx-Lim/Goe alteration. Discrete intervals of silica flooding <2cm display reduced FeOX alteration overprints. Common vuggy quartz veinlets with variable hematite staining; appear as fractures with quartz selvedge precipitates. Upper contact is partially obscured by rubble zone, several fragments record portions of the contact apparently displaying angular fragments of QFP suspended within the shale (relative timing of emplacement unknown, 'gut says' post intrusive tectonic relationship). Lower contact is sharp, irregular and oriented ~ 45° TCA. **No Visible Sulphides.**
	66.20	**97.23**	**Undifferentiated Carbonaceous Black Shale (ShU)** Highly weathered, very soft (indented by thumbnail) black shale with moderate core loss. Interval is comprised mainly of sand to pebble sized fragments of black shale and trace quartz vein fragments (< 1 cm, <1 %) supported in black clay/silt (gouge?). Discrete intervals of whole core, which are easily destroyed by weak pressure (I.E. poked with a finger). Discrete pervasive and fracture surface staining of FeOx and lim/goe. Local, minor graphite and trace talc on fracture planes. Shale is very dark, and appears carbonaceous. Weak undifferentiated fabric (S1?) observed at ~ 20° TCA in clay rich intervals. Trace light green-yellow very fine grained mineral on fracture surfaces (possibly orpiment ± scorodite? or smectite-lim/goe combination?). Lower contact obscured by rubble, exhibits slightly harder, more competent core that is not friable, still easily scratched. **No Visible Sulphides.**
	97.23	**98.06**	**Quartz-plagioclase-phyric Felsic Dyke (qpFd)** Light grey-tan, medium-grained felsic dyke with ~2% quartz eye phenocrysts (<4 mm) and feldspar phenocrysts (<5 mm) in a very fine grained, silica-rich matrix. Feldspar phenocrysts are partially to completely replaced by white clays (potentially sericite?). Weak pervasive silica flooding. Variable FeOx-lim/goe staining in fractures and several fracture surfaces (appears to have a weak yellow-green clay(?) component (potentially orpiment ± scorodite?). Weak pervasive oxide/hydroxide staining near lower contact (< 20 cm). Abundant fine-grained, subhedral disseminated and aggregated

			pyrite in rock matrix and on fractures surfaces. Lower contact is sharp, irregular and approximately perpendicular to core axis. Several vuggy quartz veinlets with FeOx staining near lower contact, one of which, cross-cuts the contact. **5% Pyrite.**
	98.06	**102.95**	**Undifferentiated Carbonaceous Black Shale (ShU)** Highly weathered, very soft (indented by thumbnail) black shale with moderate core loss. Interval is comprised mainly of sand to pebble sized fragments of black shale and trace quartz vein fragments (< 1 cm, <1 %) supported in black clay/silt (gouge). Discrete pervasive and fracture surface staining of FeOx and lim/goe. Local, minor graphite and trace talc on fracture planes. Shale is very dark, and appears carbonaceous. Trace light green-yellow very fine grained mineral on fracture surfaces (possibly orpiment? More likely smectite-lim/goe combination?). Interval proximal to upper contact is relatively competent, still easily scratched with scribe and displaying rare irregular quartz veinlets <2 mm. **No Visible Sulphides.**
August 8, 2013 **101.10 – 255.42 m**	**102.95**	**105.60**	**Quartz-plagioclase-phyric Felsic Dyke (qpFd)** Light grey (with slight green-yellow tint), medium-grained felsic dyke with ~5% quartz eye phenocrysts (<4 mm) and feldspar phenocrysts (<5 mm) in a very fine grained, undifferentiated matrix. Feldspar phenocrysts are partially to completely replaced by clays, and display weak FeOx –hematite staining. Weak patchy silica flooding (associated with local increases in disseminated fine-grained pyrite). Variable FeOx-lim/goe staining on fracture surfaces and discrete weak pervasive alteration; appears to have a yellow-green clay(?) component (potentially orpiment ± scorodite?). Abundant fine-grained, subhedral disseminated and aggregated pyrite in rock matrix and on fractures surfaces. Lower contact is sharp, irregular and approximately parallel to core axis and appears associated with local silica flooding. Several vuggy quartz veinlets with FeOx staining. **2% Pyrite.**
	105.60	**108.50**	**Undifferentiated Black Carbonaceous Shale (ShU)** Dark black, very soft, highly weathered undifferentiated shale. Mostly rubble, sand and grit in clay/gouge. Rare quartz vein and small QFP fragments in gouge. Discrete fragments exhibit planar fabric; further distinction impossible. Lower contact is obscured by rubble and gouge. **No Visible Sulphides.**
	108.50	**110.20**	**Quartz-plagioclase-phyric Felsic Dyke (qpFd)** Medium grey-orange, medium-grained felsic dyke with ~5% quartz eye phenocrysts (< 3mm) and abundant subhedral feldspar phenocrysts (<4mm). Feldspar phenocrysts are highly altered to clay and stained with FeOx-hematite. Moderately pervasive and strongly fracture controlled Lim/goe-FeOx alteration. Minor yellow-green clay component on fracture surfaces (?Orpiment ± scorodite?). Discrete,

			weak silica flooding near lower contact, which is sharp, irregular and obscured by rubble and gouge. Abundant fine-grained disseminated and aggregated pyrite. **2% Pyrite.**
	110.20	**113.69**	**Quartz-plagioclase-phyric Felsic Dyke (qpFd) and Undifferentiated Black Carbonaceous Shale (ShU).** Dark black, highly weathered, soft undifferentiated black shale dominated by rubble, sand and grit in clay/gouge with discrete intervals of quartz-plagioclase-phyric felsic dike less than 40 cm. Dikes display sharp irregular contacts with shale, that appear more competent at the contact (Baked?). Shales host abundant QFP and quartz vein fragments, in addition to common FeOx-Lim/goe on fracture surfaces. Quartz-plagioclase-phyric dikes exhibit pervasive and fracture controlled FeOx-Lim/goe alteration with discrete green clay component (?Orpiment ± scorodite?) and minor fine-grained disseminated pyrite. **1% Pyrite.**
	113.69	**124.66**	**Quartz-plagioclase-phyric Felsic Dyke (qpFd)** Light grey quartz-plagioclase-phyric felsic dike with 10-15% quartz eye phenos (<4mm), abundant sub to euhedral plagioclase laths (<1 cm) and elongate prismatic to acicular mafics (< 3mm) in a fine-grained silica-rich groundmass. Feldspars are variably white clay (Sericite?) and FeOx (near fractures) altered. Mafics display partial replacement by pyrite. Discrete fracture controlled FeOx-Lim/goe alteration with minor flooding into wall rock (<5mm). Local ghosting of phenocrysts and groundmass associated with increase in hardness interpreted to be a result of weak silica flooding. Common fine-grained disseminated and aggregated pyrite. Pyrite commonly replaces mafics. Lower contact obscured by rubble. **2% Pyrite.**
	124.66	**153.00**	**Siliceous Shale (ShS)** Medium-dark, grey-black, variably siliceous, laminated to very thinly bedded shale. Laminated pyrite horizons, and rare pyrite lenses. Abundant very fine-grained disseminated pyrite. Bedding appears locally variable, but overall approximately 35-60° TCA with discrete intervals of consistent 50° TCA bedding. Rare fracture controlled FeOx, very rare graphite and talc alteration. Common quartz-carbonate (orange-buff with a weak reaction to HCl) ± pyrite veins and local vein breccias cross-cut bedding. Veins contain small variable euhedral pyrite fraction. Rare pyrite veinlets (<1mm) are observed parallel to and cross-cutting bedding and foliation fabrics. Several foliation fabrics are observed from 20-80° TCA and locally cross-cut one another. Lower contact is delineated by a fault, which displays an approximate orientation of 35-40° TCA. **2% Pyrite.**
	153.00	**172.21**	**Siliceous Shale (ShS)** Medium-dark, grey-black, variably siliceous, laminated to very thinly

			bedded shale. Laminated pyrite horizons, rare pyrite nodules and lenses. Abundant very fine-grained disseminated pyrite. Upper contact is faulted, displaying a bedding of 15-20° TCA which steepens to approximately 35° TCA away from faulted contact. Fault is approximately 30 cm in width. Rare graphite and trace talc on fracture surfaces. Common quartz-carbonate (Orange-buff and rare green varieties all weakly react with HCl) ± pyrite ± zeolites(?) veins and vein breccias, which exhibit large euhedral aggregates of pyrite. Trace pyrite veinlets that cross-cut bedding and foliation. **2% Pyrite.**
	172.21	**223.72**	**Graphitic Shale (ShS)** Medium-dark, grey-black, weakly siliceous, graphitic, shale with rare laminated and very thin beds often delineated by pyrite horizons oriented 20-50° TCA. Unit appears very similar to previous interval, with a much larger degree of structural control and increased graphite on fracture surfaces. Rare disseminated and nodular to lenticular pyrite. Abundant graphite and minor talc on fracture surfaces. Core is highly fractured with abundant minor gouge zones < 10 cm, ~1/2 m. Rare core above 10 cm. Fracture networks display weak orientation ~ 20° TCA. Unit contains abundant quartz ± carbonate (Yellow-brown to green, weak reaction with HCl), which commonly exhibit ladder vein characteristics and vein breccias. Trace pyrite is observed in vein breccia examples. Several quartz-carbonate veins appear to exhibit discrete dissolution textures. **0.5% Pyrite**
	223.72	**230.00**	**Fault (UT)** Highly broken and incompetent interval with abundant core loss (~ 3m), abundant gouge and highly fractured rubble fragments of undifferentiated black shale. Rare graphite and talc on shale fragment surfaces. Rare quartz-carbonate (pistachio greenish) fragments in gouge and rubble. Contacts are obscured, but display a proximal tectonic fabric oriented ~ 20-30° TCA. Trace pyrite in shale rubble. **Trace Pyrite.**
	230.00	**239.00**	**Graphitic Shale (ShS)** Medium-dark, grey-black, weakly siliceous, graphitic, shale with discrete undifferentiated banding. Interval is highly broken, blocky and displays profuse anastamosing fracture networks. Minor disseminated and nodular pyrite. Abundant graphite and minor talc on fracture surfaces. Several quartz ± carbonate (pistachio greenish) veins and vein breccias with trace pyrite in one example. Minor ladder vein styles are also observed. **0.5% Pyrite**
	239.00	**240.66**	**Fault (UT)** Highly broken and incompetent interval with abundant core loss (~ 3m), abundant gouge and highly fractured rubble fragments of undifferentiated black shale. Rare graphite and talc on shale

			fragment surfaces. Rare quartz vcarbonate (pistachio greenish) fragments in gouge and rubble. Contacts are obscured, but display a proximal tectonic fabric oriented ~ 20-30° TCA. Trace pyrite in shale rubble. **Trace Pyrite.**
	240.66	**257.56**	**Graphitic Shale (ShS)** Medium-dark, grey-black, weakly siliceous, graphitic, shale with discrete undifferentiated banding. Interval is highly broken, blocky and displays profuse anastamosing fracture networks, which display a weak alignment, oriented ~ 20° TCA. Minor disseminated and nodular pyrite. Abundant graphite and minor talc on fracture surfaces. Several quartz ± carbonate (pistachio greenish) veins and vein breccias with trace pyrite. Minor ladder vein styles are also observed. Local green-blue unidentified mineral is observed on rare fracture surfaces (?Scorodite?). **0.5% Pyrite.**
August 9, 2013 **255.42 – 340.34 m**	**257.56**	**268.90**	**Fault (UT)** Dark black pulverized fragments of undifferentiated shale and trace quartz vein fragments with minor gouge < 15 cm. Several local blocky fragments display undifferentiated banding; the degree of fragmentation makes distinction of bedding or foliation impossible to do with confidence. Trace pyrite observed as aggregates in quartz veins. **Trace Pyrite**
	268.90	**280.90**	**Graphitic Shale (Shs)** Dark grey-black weakly siliceous, graphitic shale with discrete, very thinly bedded fine-grained, pyrite-rich, sandstone/quartzite intervals < 3 cm that are commonly observed as sub-angular, chaotic to jigsaw fit breccia zones. Quartzite clasts display up to 80% fine-grained disseminated pyrite concentrated within the center of clasts with discrete barren rims 1-5 mm. Shale exhibits strong anastamosing fracture network with local alignment approximately 30° TCA and abundant graphite on fracture surfaces, which truncate quartz veins. Common quartz ± pyrite ± carbonate veins and vein breccias which are locally truncated by strong fracture networks. Strength of fracture fabric makes confident estimation of bedding impossible. **2% Pyrite**
	280.90	**305.75**	**Quartz-Plagioclase-Phyric Felsic Dike (qpFD)** Light grey-white, with a weak hint of green, felsic dike with (<5%) quartz eye phenocrysts (<4 mm) and abundant feldspar phenocrysts (<1.5 cm, which display simple twins and mafic inclusions, weak white clay (Sericite?) alteration) and minor (<5%) bladed to elongate prismatic and acicular undifferentiated mafics (<3 mm) commonly partially to completely replaced by pyrite ± arsenopyrite. Trace fine mica (<2mm-muscovite) is also observed. Local feldspar and widespread weak pervasive sericite (Soft light green clay) alteration. Pyrite and arsenopyrite are observed as fine-grained disseminations

			and small aggregates which locally partially to completely replace mafics and are found at roughly 2:1 ratio of pyrite to arsenopyrite. No veins. **1% Pyrite, 0.5% Arsenopyrite**
August 10, 2013 **340.34 – 359.97 m** **EOH**	**305.75**	**359.97** **EOH**	**Graphitic Shale (Shs)** Dark grey-black, weakly siliceous graphitic shale with discrete laminated and very thin beds of rare sandstone/quartzite < 3 cm oriented approximately 20-30° TCA. Quartzite beds exhibit brecciation and locally increased pyrite concentrations. Pyrite is observed as fine-grained disseminations, nodules and rare lenses in addition to aggregates within rare quartz ± pyrite ± carbonate (green-yellow with very weak reaction with HCl) veins and minor vein breccias. Discrete pyrite nodules display internal concentration of pyrite along fractures that cross through the nodules; resemble pyrite stringers with diffuse margins. Rare nodules contain small component of quartz precipitate and truncated veinlets. Mostly competent core with local fracture networks and discrete foliation fabric oriented ~25° TCA. Common graphite with minor talc on fracture surfaces. Trace unidentified green mineral (?Scorodite?) on rare fracture surfaces barren of graphite. **1.5% Pyrite.** **EOH**

DataSet: **ORO_GF**

Depth (m)	Hole Type	Core Diamete	Grid ID	East	North	Elevation	Survey Method	Survey Date	Survey By	Date Started	Date Completed	Logged By	Prospect	Validated By

Hole: ORO13-06

359.97 m	DD	HQ/NQ	UTM09N_NAD83	400655	7020122	1350	GPS	04/08/2013	RC	06/08/2013	10/08/2013	Svan	Main Zone	Svan

Note: Cased and cored to 105 ft (32.00 m), with abundant core loss in highly weathered and decomposed bedrock.

GeoSpark Logger Print Logs ~ DH Surveys

DataSet: ORO_GF

Hole ID: ORO13-06

Depth (m)	Survey Method	Grid ID	Dip	Surv. Tool Azimuth	Magnetic Declination	Corrected Azimuth	Magnetics	Date Surveyed	Survey Instrument	Bad Reading	Comments
0	COLL	UTM09N_NAD83	-60	30	0	30		10/08/2013	CMP	☐	
65.23	EZ Shot	UTM09N_NAD83	-60.1	20.9	22.5	43.4		10/08/2013	EZ	☐	
130.15	EZ Shot	UTM09N_NAD83	-60.6	18.5	22.5	41		10/08/2013	EZ	☐	
185.82	EZ Shot	UTM09N_NAD83	-59.9	18.6	22.5	41.1		08/08/2013	EZ	☐	
255.73	EZ Shot	UTM09N_NAD83	-58.6	16.6	22.5	39.1		11/08/2013	EZ	☐	
316.69	EZ Shot	UTM09N_NAD83	-58.2	16.4	22.5	38.9		11/08/2013	EZ	☐	
359.97	EZ Shot	UTM09N_NAD83	-57.9	18.2	22.5	40.7		10/08/2013	EZ	☐	

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Signed: _______________

DataSet: ORO_GF

Hole ID: ORO13-06

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	0	16.49	Overburden	Overburden (OB)	Overburden

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	16.49	59.13	Black Shale	undifferentiated shale	Weathered, soft/incompetent, carbonacous black shale. Lrg Core loss. Rare qtz-vein frags. Wk fabric(S1?So?). Rare FeOx-lim/goe-graph on fracsurf.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	16.49	59.13	VQtz	n/a	0.1										Fragments and sand sized grains of quartz veins are observed in gouge, clay and rare shale fragments.

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	16.49	59.13	FLTG	VS	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	59.13	62.3	No Core/Chips recovery	No Core Recovered	No core recovered.

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DataSet: ORO_GF

Hole ID: ORO13-06

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
59.13	62.3	NoVeins	n/a											No core recovered.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	62.3	66.2	Felsic Dyke	Quartz and plag-phyric felsic dykes (FDyk)	Lgt yell-orange-grey, mg qtz-feldspar-phyric dyke. Mod-Str perv/fracon FeOx-lim/goe alt'n. Str clay alt'n of feldspars. Sparse hematite staining. Discrete silica flooding. Rare vuggy qtz vnlets w/ FeOx staining.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
62.3	66.2	VQtz	±hem	0.5										Common vuggy quartz veinlets with variable hematite staining; appear as fractures with quartz selvedge precipitates.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	66.2	97.23	Black Shale	undifferentiated shale	Weathered, soft/incompetent, carbonacous black shale. trace qtz-vein frags. Wk fabric(S1?) ~20 TCA. Rare FeOx-lim/goe-graph-talc on fracsurf. Lwr cntct appears more competent (Baked?)

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DataSet: ORO_GF

Hole ID: ORO13-06

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
16.49	97.23	UnMin	0											No visible sulphides.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
66.2	97.23	VQtz	n/a	0.05										Fragments and sand sized grains of quartz veins are observed in gouge, clay and rare shale fragments.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
66.2	86.46	FLTG	VS	
86.46	88.08	RUB	S	
88.08	90.2	FLTG	VS	
90.2	91.74	RUB	S	
91.74	92.65	FOL		20
92.65	95.7	FLTG	S	
95.7	97.23	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	97.23	98.05	Felsic Dyke	Quartz and plag-phyric felsic dykes (FDyk)	Lgt grey, mg qtz-feldspar-phyric dyke. Wk perv/fracon FeOx-lim/goe alt'n. Str white clay alt'n of feldspars. Trace fracon hem. Wk perv silica flooding. Rare vuggy qtz vnlets w/ trace FeOx staining x-cut lwer cntct. Abundant fg diss/aggrgt py.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
97.23	98.05	Py	5	AGG										Abundant fine-grained, subhedral disseminated and aggregated pyrite in rock matrix and on fractures surfaces.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
97.23	98.05	VQtz	±hem	0.25										Several vuggy quartz veinlets with FeOx staining near lower contact, one of which, cross-cuts the contact.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
97.23	98.75	RUB	S	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	98.05	102.95	Black Shale	undifferentiated shale	Weathered, soft/incompetent, carbonacous black shale. trace qtz-vein frags. Rare FeOx-lim/goe-graph on fracsurf. Upper cntct appears more competent (baked?) lwr cntc irreg, shrp.

DataSet: ORO_GF

Hole ID: ORO13-06

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
98.05	102.95	UnMin	0											No visible sulphides

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
98.05	102.95	VQtz	n/a	0.2										Fragments and sand sized grains of quartz veins are observed in gouge, clay and rare shale fragments.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
98.75	102.95	FLTG	S	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	102.95	105.6	Felsic Dyke	Quartz and plag-phyric felsic dykes (FDyk)	Lgt grey-yellow, mg wkly qtz-feldspar-phyric fdyk. Clay alt'n of feldspar phenos. Lim/goe-FeOx fracon alt'n. Discrete patchy/fracon green clay(?orp?). Local silica flooding. 4% diss/agg py. Lwr cntc parallel TCA.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
102.95	105.6	Py	2	DIS										Abundant fine-grained, subhedral disseminated and aggregated pyrite in rock matrix and on fractures surfaces

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	105.6	108.5	Black Shale	undifferentiated shale	Blk, soft, highly weathered and clay alt'd undiff shale. Mstly rubble-clay-goouge-sand-grit. Rare qtz-vein and QFP fragments. Lwr cntct obscured by rubble-gouge.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
105.6	108.5	UnMin	0											no visible sulphides

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
105.6	108.5	FLTG	S	

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DataSet: ORO_GF

Hole ID: ORO13-06

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	108.5	110.2	Felsic Dyke	Quartz and plag-phyric felsic dykes (FDyk)	Med-dark grey-orange-yellow, mg, wkly qtz-plag-phyric felsic dike. Wk perv, str fraccon lim/goe-FeOx±green/yellow clay(?Orp/sco?). Wk silica flooding. Abundant diss/agg pyrite. Rare vuggy qtz-FeOx veins. Lwr cntct obscured by rubb/gouge.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	108.5	110.2	Py	2	DIS										Abundant fine-grained disseminated and aggregated pyrite.

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	110.2	113.69	Black Shale	undifferentiated shale	Dark black, highly weathered, soft undiff, black carbonaceous shale with several QFP dike intervals <30cm. Mostly rubble, sand and grit in clay/gouge.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	110.2	113.69	Py	1	DIS										Diss and aggregate py in QFP dikes within interval of unmineralized undiff black carbonaceous shale.

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	110.2	113.69	RUB	S	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	113.69	124.66	Felsic Dyke	Quartz and plag-phyric felsic dykes (FDyk)	Med grey, mg qtz-plag-phyric felsic dike with elongate prismatic/acicular mafics. Wk lim/goe-FeOx. Wk patchy silica flooding. Pyrite replacement of mafics. Abundant fg diss/agg py. Clay (ser?) replacement of feldspars. Lwr cntct obscured by rubble.

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DataSet: ORO_GF

Hole ID: ORO13-06

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
102.95	124.66	VQtz	n/a	0.1										Rare vuggy quartz veinlets with variable FeOx staining

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
115.21	118	RUB	M	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	124.66	153	Siltstone	Siliceous shale	Drk grey-black, variably siliceous, lam/vthnbd'd shale. Thin py laminations. Rare lenses and abundant diss. ~50 TCA bedding. Abundant x-cutting foliat'n fab. Common qtz-carb±py vens/vnBX's. Flt'd lwr cntct.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
124.66	171.21	VQCarb	±py	0.5	Vpy		0.1							Common quartz-carbonate (orange-buff with a weak reaction to HCl) ± pyrite veins and local vein breccias cross-cut bedding. Veins contain small variable euhedral pyrite fraction. Rare pyrite veinlets (<1mm) are

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
124.66	126	RUB	S	
126.18	126.19	BED		55
127.71	130.15	RUB	M	
130.5	130.51	BED		60
131.9	131.91	FOL		34
132.01	132.02			40
135.69	135.7	BED		58
140.55	140.56	FOL		32
150	150.01	BED		26
151.26	151.27	FOL		20

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	153	172.21	Siltstone	Siliceous shale	Drk gry-blk, lam/vthnbd'd variably siliceous shales w/ thn py lam'ns, minor nods±lenses. Bedding ~35 TCA. Qtz-carb±py veins/vnBX.

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DataSet: **ORO_GF**

Hole ID: **ORO13-06**

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
113.69	172.21	Py	2	VNS										QFP:. Common fine-grained disseminated and aggregated pyrite. Pyrite commonly replaces mafics. ShS:Laminated pyrite horizons, and rare pyrite lenses. Abundant very fine-grained disseminated pyrite and in qtz-carb veins.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
153	153.3	FLTG	S	40
153.3	153.31	FOL		
153.31	153.32	BED		20
156.21	156.22			16
160.6	160.61			35
161.75	161.76	FOL		40

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	172.21	223.72	Shale	Siliceous shale	Med-drk, gry-blk, highly fractured wkly siliceous, graphitic shale w/ rare laminated and vthn py beds 20-50TCA. Fracture network is wkly oriented ~20TCA. Common gouge <10cm. Abundant graphite, mnr talc on fracsurf. Common qtz-carb vnBX, trace py.

DataSet: ORO_GF

Hole ID: ORO13-06

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
172.21	223.72	Py	0.5	DIS										Pyrite is observed in rare laminations, discrete nodules and lenses and minor fg diss'ns in addition to trace aggregated vein component.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
174.65	175	RUB	S	
177.12	177.13	BED		27
177.97	177.98	FOL		30
177.98	179.1	RUB	S	
179.38	180.14	FLTG		
180.14	181	RUB	VS	
183	188.9			
188.9	191.17	BRX		
191.17	201.07	RUB	S	
201.07	201.08	FOL		23
201.08	207.4	RUB	S	
207.4	207.43	FLTG		32
207.43	210.7	RUB	S	
210.7	210.86	FLT		
210.86	216.1	RUB		
216.1	216.95	FLT		
216.95	217.03	FLTG	S	40
217.03	223.72	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	223.72	230	Tectonic/Fault Rock - Undifferentiated	Fault (UT)	Drk blk shale and qtz-vn/vnBX fragments suspended in abundant clay/gouge. Abundant core loss.

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DataSet: ORO_GF

Hole ID: ORO13-06

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
223.72	230	Py	0.05	UNKN										Discrete trace fg pyrite in gouge.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
223.72	228.6	FLTG	S	
228.6	230	FLT		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	230	239	Shale	Siliceous shale	Med-drk, gry-blk, wkly sil, graphitic, shale w/ discrete banding. highly brkn, blky and displays profuse chaotic fracture networks. Minor diss and nod py. Abundant grap, minor talc on fracsurf. Qtz-carb (pistachio greenish) vns/vnBXs w/ trace py.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
230	239	Py	0.5	DIS										Pyrite is observed in rare laminations, discrete nodules and lenses and minor fg diss'ns in addition to trace aggregated vein component.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
232.04	232.05	FOL		26
236.75	239			30

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	239	240.66	Tectonic/Fault Rock - Undifferentiated	Fault (UT)	Drk blk shale and qtz-vn/vnBX fragments suspended in abundant clay/gouge. Abundant core loss.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
239	240.66	Py	0.05	UNKN										Discrete trace pyrite in gouge.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
239	240.66	FLT	S	

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DataSet: **ORO_GF**

Hole ID: **ORO13-06**

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	240.66	257.56	Shale	Siliceous shale	Med-drk, gry-blk, wkly sil, graphitic, shale w/ discrete banding. highly brkn, blky and displays fract netwrk ~ 20TCA. Minor diss and nod py. Abundant graph, minor talc and trace green min(?Sco?) on fracsurf. Qtz±carb vns/vnBXs w/ tr py.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
240.66	257.56	Py	0.5	DIS										Pyrite is observed in rare laminations, discrete nodules and lenses and minor fg diss'ns in addition to trace aggregated vein component.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
171.21	257.56	VQtz	±carb±py	0.75										Qtz ± rare [carb(green-yellow)±py±clays(Zeo?)] vein breccias, wk stockworks/networks, ladder and individual veins. Local concentration increase from 185-204 of ~1.25% vein material.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
240.66	242.14	RUB	S	
242.14	242.5	FLT		
242.5	245.7	RUB		
245.7	246	FLT		
246	253.86	RUB	M	
253.86	253.87	FOL		20
253.87	257.56	RUB	S	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	257.56	268.9	Tectonic/Fault Rock - Undifferentiated	Fault (UT)	Dark black pulverized fragments of undifferentiated shale and trace quartz vein fragments with minor gouge < 15 cm.

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DataSet: ORO_GF

Hole ID: ORO13-06

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
257.56	268.9	Py	0.05	UNKN										Trace pyrite observed suspended in clay and minor gouge of fault zone.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
257.56	268.9	VQtz	±py	0.1										trace qtz-py vein fragments observed in rubble zone.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
257.56	259.1	FLT	S	
259.1	261.82	FLTG		
261.82	268.9	FLT		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	268.9	280.9	Shale	Siliceous shale	Drk gry-blk, wkly siliceous, graphitic shale w/ vthnbeds of ss/qtzite containing <80%fgDissPy and BX'n of ss/qtzite beds. Str fracture netwrk ~30TCA. Common qtz±py±carb vn/vnBX truncated by fracfab.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
268.9	280.9	Py	2	DIS										Pyrite is observed as rare laminated horizons, fine-grained disseminations, lenses/nodules and aggregates within veins. In addition, qtzite/ss clasts/vthnbeds contain up to 80% fg diss py.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
268.9	280.9	VQtz	±py±carb	1										Common qtz veins/vein breccias/stockworks with local aggregated pyrite and trace carbonate (green-yellow with weak rxn w/ HCl).

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
268.9	274	RUB	S	
274	274.2	FOL		30
276.98	277.06	RUB	S	
278.5	278.51	FOL		25
278.61	280.42	RUB	S	

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DataSet: ORO_GF

Hole ID: ORO13-06

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	280.9	305.75	Felsic Dyke	Quartz and plag-phyric felsic dykes (FDyk)	Lgt grey-green fdyk w/ qtz eye and feldspar phenos and minor bladed/acicular mafics (and trace muscovite) partially to completely replaced by py±apy. Local ser alt'n of feldspars and weak perv ser alt'n of g.m. Common fg diss py±apy.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
280.9	305.75	Apy	0.5	REPL	Py	1	REPL							Py-apy are observed partially to completely replacing acicular, bladed to elongate prismatic mafics, as well as potential disseminations (could be complete replacement of v small mafics?

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
280.9	305.75	NoVeins	n/a											No veins

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	305.75	359.97	Shale	Siliceous shale	drk gry-blk wkly sil, graphitic shale w/ rare lam and brecciated vthn beds of qtzite w/ incresd py. Fg diss, nodular and rare lenses of py. Rare qtz±py±carb veins. Local bedding ~20-30TCA. Local foliation ~ 25TCA. Common graphite±talc and trace sc?

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
305.75	359.97	VQtz	±py±carb	0.25										Minor qtz veins rare vein breccias/stockworks with local aggregated pyrite and trace carbonate (green-yellow with weak rxn w/ HCl).

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
305.97	306	FOL		30
306.48	306.49	BED		20
314	314.52			
321.86	322.78	FLT		
340.75	341.05	RUB	M	
344.29	344.31	BED		25
348.5	349	RUB	W	
354.79	359.97		M	

GeoSpark Logger Print Logs ~ Geotechnical

DataSet: ORO_GF

Hole ID: ORO13-06

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
16.49	17.88	1.39	0.1	7.19425	0	0	sof	50	50	SFT		
17.88	19.5	1.62	0	0	0	0						
19.5	24.08	4.58	0.26	5.67686	0	0	sof	50	50	SFT		
24.08	25.6	1.52	0.05	3.28947	0	0	sof	10	10	SFT		
25.6	26.22	0.62	0.3	48.3872	0	0	sof	100	100	SFT		
26.22	27.74	1.52	0.7	46.0526	0	0	sof	100	100	SFT		
27.74	28.65	0.91	0.37	40.6594	0	0	sof	100	100	SFT		
28.65	30.18	1.53	0.5	32.6797	0	0	sof	100	100	SFT		
30.18	31.7	1.52	0.9	59.2105	0	0	sof	100	100	SFT		
31.7	33.22	1.52	0.96	63.1579	0	0	sof	100	100	SFT		
33.22	34.75	1.53	1.15	75.1635	0	0	sof	100	100	SFT		
34.75	35.36	0.61	0.6	98.3606	0	0	sof	10	10	SFT		
35.36	36.58	1.22	0.5	40.9836	0	0	sof	100	100	SFT		
36.58	37.8	1.22	1	81.9674	0	0	sof	100	100	SFT		
37.8	39.32	1.52	0.64	42.1053	0	0	sof	100	100	SFT		
39.32	39.93	0.61	0.59	96.7212	0	0	sof	100	100	SFT		
39.93	40.84	0.91	0.52	57.1429	0	0	sof	20	20	SFT		
40.84	42.37	1.53	1.25	81.6994	0	0	sof	100	100	SFT		
42.37	43.84	1.47	0.13	8.84353	0	0	sof	100	100	SFT		
43.84	44.2	0.36	0.03	8.33332	0	0	sof	10	10	SFT		
44.2	45.42	1.22	0.34	27.8689	0	0	sof	100	100	SFT		
45.42	46.94	1.52	0.98	64.4737	0	0	sof	100	100	SFT		
46.94	47.85	0.91	0.27	29.6703	0	0	sof	55	55	SFT		
47.85	48.46	0.61	0.16	26.2295	0	0	sof	25	25	SFT		
48.46	49.99	1.53	0.08	5.22875	0	0	sof	100	100	SFT		
49.99	50.9	0.91	0.2	21.9780	0	0	sof	80	80	SFT		
50.9	52.43	1.53	0.1	6.53595	0	0	sof	25	25	SFT		
52.43	53.04	0.61	0	0	0	0						
53.04	53.34	0.3	0	0	0	0						
53.34	55.17	1.83	0.08	4.37159	0	0	sof	25	25	SFT		
55.17	56.08	0.91	0.06	6.59338	0	0	sof	30	30	SFT		
56.08	57.6	1.52	0.2	13.1579	0	0	sof	100	100	SFT		
57.6	59.13	1.53	0.5	32.6797	0	0	sof	100	100	SFT		
59.13	60.35	1.22	0	0								
60.35	60.65	0.3	0	0								
60.65	62.17	1.52	0	0								
62.17	63.7	1.53	0.85	55.5555	0.29	18.95	mode	50	50	STR		

Hole ID: **ORO13-06**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
63.7	65.52	1.82	1.2	65.9342	0.73	40.11	mode	18	18	STR		
65.52	66.75	1.23	1.12	91.0567	0.34	27.64	mode	12	12	STR		
66.75	68.27	1.52	0.98	64.4738	0.17	11.18	sof	100	100	SFT		
68.27	69.79	1.52	1.4	92.105	0.66	43.42	sof	50	50	SFT		
69.79	71.32	1.53	1.25	81.6994	0.73	47.71	sof	100	100	SFT		
71.32	72.84	1.52	0.9	59.2107	0	0	sof	100	100	SFT		
72.84	74.37	1.53	0.85	55.5553	0	0	sof	100	100	SFT		
74.37	75.89	1.52	0.3	19.7369	0	0	sof	100	100	SFT		
75.89	77.41	1.52	1.1	72.3682	0.45	29.61	sof	100	100	SFT		
77.41	78.92	1.51	1.13	74.8347	0.37	24.5	sof	100	100	SFT		
78.92	80.48	1.56	0.58	37.1794	0	0	sof	100	100	SFT		
80.48	82	1.52	0.8	52.6317	0	0	sof	100	100	SFT		
82	83.51	1.51	0.7	46.3576	0	0	sof	100	100	SFT		
83.51	84.73	1.22	0.9	73.7704	0	0	sof	100	100	SFT		
84.73	86.56	1.83	1.35	73.7707	0.18	9.84	sof	100	100	SFT		
86.56	88.08	1.52	1.04	68.4209	0	0	sof	100	100	STR		
88.08	89.61	1.53	1.04	67.9739	0	0	sof	100	100	SFT		
89.61	91.13	1.52	1.22	80.2633	0	0	mode	100	100	STR		
91.13	92.65	1.52	1.4	92.105	0.64	42.11	mode	20	20	STR		
92.65	94.18	1.53	1.4	91.5033	0.52	33.99	sof	55	55	SFT		
94.18	95.7	1.52	0.54	35.5264	0.11	7.24	sof	20	20	SFT		
95.7	97.23	1.53	1.26	82.3526	0.3	19.61	sof	40	40	SFT		
97.23	98.75	1.52	1.25	82.2370	0.75	49.34	mode	12	12	STR		
98.75	100.27	1.52	1.1	72.3686	0.12	7.89	sof	100	100	SFT		
100.27	101.8	1.53	1.36	88.8885	0	0	sof	100	100	VWK		
101.8	103.32	1.52	1.51	99.3423	0.1	6.58	sof	100	100	VWK		
103.32	104.85	1.53	1.41	92.1569	0.81	52.94	mode	35	35	STR		
104.85	106.37	1.52	1.52	99.9997	0.29	19.08	mode	100	100	STR		
106.37	107.89	1.52	0.81	53.2896	0	0	sof	100	100	VWK		
107.89	109.42	1.53	1.23	80.3922	0	0	mode	100	100	STR		
109.42	110.94	1.52	1.31	86.184	0	0	mode	100	100	STR		
110.94	112.47	1.53	1.52	99.3465	0	0	mode	100	100	STR		
112.47	113.99	1.52	1.29	84.8686	0.1	6.58	mode	100	100	STR		
113.99	115.21	1.22	1.24	101.639	0	0	sli	57	57	STR		
115.21	118.57	3.36	2.29	68.1548	0.41	12.2	mode	100	100	STR		
118.57	121.62	3.05	2.63	86.2294	0.63	20.66	mode	51	51	STR		
121.62	124.66	3.04	3.03	99.6710	0.64	21.05	sli	75	75	STR		
124.66	124.97	0.31	0.22	70.9683	0.1	32.26	sli	38	38	STR		
124.97	127.71	2.74	1.67	60.949	0.27	9.85	sli	45	45	STR		

Hole ID: **ORO13-06**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
127.71	130.15	2.44	1.84	75.41	0.13	5.33	sli	100	100	STR		
130.15	133.2	3.05	2.79	91.4753	0.43	14.1	sli	100	100	STR		
133.2	134.11	0.91	0.9	98.9007	0	0	sli	55	55	STR		
134.11	136.86	2.75	2.33	84.7273	0.37	13.45	sli	60	60	STR		
136.86	138.07	1.21	0.99	81.8177	0.11	9.09	sli	30	30	STR		
138.07	139.6	1.53	1.32	86.2746	0	0	sli	100	100	STR		
139.6	141.12	1.52	1.35	88.8164	0.3	19.74	sli	50	50	STR		
141.12	141.73	0.61	0.43	70.4917	0	0	sli	50	50	STR		
141.73	142.04	0.31	0.25	80.6458	0	0	sli	33	33	STR		
142.04	144.48	2.44	2.05	84.0163	0.21	8.61	sli	100	100	STR		
144.48	145.69	1.21	1.16	95.8672	0.1	8.26	sli	45	45	STR		
145.69	148.74	3.05	2.58	84.5901	0.14	4.59	sli	90	90	STR		
148.74	150.27	1.53	1.01	66.0131	0.1	6.54	sli	44	44	STR		
150.27	152.1	1.83	1.6	87.4316	0.21	11.48	sli	100	100	STR		
152.1	154.23	2.13	1.77	83.099	0.26	12.21	mode	100	100	STR		
154.23	156.67	2.44	2.24	91.8032	0	0	sli	65	65	STR		
156.67	156.97	0.3	0.16	53.3328	0	0	sli	32	32	STR		
156.97	160.02	3.05	2.57	84.2622	0.44	14.43	mode	100	100	STR		
160.02	163.07	3.05	2.81	92.1311	1.49	48.85	sli	28	28	STR		
163.07	166.12	3.05	2.84	93.1151	1.51	49.51	sli	24	24	STR		
166.12	169.16	3.04	2.69	88.4866	1.11	36.51	sli	47	47	STR		
169.16	172.21	3.05	2.9	95.0819	1.5	49.18	mode	34	34	STR		
172.21	174.65	2.44	2.11	86.4759	0.86	35.25	mode	41	41	STR		
174.65	176.17	1.52	1.29	84.8682	0.23	15.13	mode	75	75	STR		
176.17	178.31	2.14	1.63	76.1682	0.32	14.95	mode	60	60	STR		
178.31	179.53	1.22	0.93	76.2294	0	0	sof	100	100	STR		Sof (from here until stated otherwise) is a result of graphite on fracture surfaces.
179.53	180.14	0.61	0	0	0	0	non	0	0	NA		no recovery block to block
180.14	182.58	2.44	1.65	67.6229	0.26	10.66	sof	100	100	STR		
182.58	184.1	1.52	0.92	60.5262	0.16	10.53	sof	100	100	STR		
184.1	185.62	1.52	1	65.79	0	0	sof	100	100	VWK		
185.62	188.67	3.05	1.11	36.3934	0	0	sof	100	100	VWK		
188.67	191.71	3.04	2.38	78.2893	0.33	10.86	sof	100	100	STR		
191.71	193.85	2.14	1.67	78.0374	0.22	10.28	sof	100	100	STR		
193.85	196.13	2.28	0.8	35.0877	0	0	mode	100	100	STR		
196.13	197.81	1.68	1.26	75.0003	0.12	7.14	sof	100	100	STR		
197.81	199.64	1.83	1.49	81.4207	0.24	13.11	sof	100	100	STR		
199.64	200.86	1.22	1.13	92.6229	0.31	25.41	sof	47	47	STR		
200.86	202.38	1.52	1.5	98.6839	0	0	sof	85	85	STR		

Hole ID: **ORO13-06**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
202.38	203.3	0.92	0.67	72.8262	0.13	14.13	sof	22	22	STR		
203.3	204.82	1.52	1.25	82.2366	0.34	22.37	sof	42	42	STR		
204.82	206.95	2.13	1.46	68.5449	0	0	sof	100	100	STR		
206.95	209.39	2.44	1.3	53.2786	0.14	5.74	sof	100	100	STR		
209.39	210.92	1.53	1.57	102.615	0.29	18.95	sof	100	100	STR		
210.92	211.83	0.91	0.67	73.6261	0	0	sof	100	100	STR		
211.83	213.96	2.13	0.98	46.0093	0	0	sof	100	100	STR		
213.96	216.1	2.14	0.49	22.8972	0	0	sof	100	100	STR		
216.1	218.23	2.13	1.25	58.6857	0	0	sof	100	100	STR		
218.23	220.67	2.44	0.72	29.5082	0	0	sof	100	100	STR		
220.67	223.72	3.05	1.69	55.4098	0	0	sof	100	100	STR		
223.72	226.46	2.74	0.61	22.2627	0	0	sof	100	100	VWK		abundant gouge over entire interval
226.46	228.6	2.14	0.73	34.1122	0	0	sof	100	100	VWK		abundant gouge over entire interval
228.6	230.73	2.13	1.2	56.3383	0.11	5.16	sof	100	100	VWK		minor gouge and abundant graphite.
230.73	233.47	2.74	2.45	89.4159	0.69	25.18	sof	100	100	STR		abundant graphite
233.47	236.52	3.05	2.91	95.4097	1.16	38.03	sof	100	100	STR		
236.52	239.26	2.74	1.35	49.2703	0.13	4.74	sof	100	100	STR		
239.26	240.48	1.22	0.47	38.5246	0	0	sof	100	100	VWK		minor graphite, abundant gouge over entire interval
240.48	243.53	3.05	1.77	58.0327	0.16	5.25	sof	100	100	VWK		minor graphite, minor gouge over interval
243.53	245.67	2.14	1.78	83.1776	0.13	6.07	sof	100	100	STR		abundant graphite, minor gouge.
245.67	247.19	1.52	1.41	92.7629	0	0	sof	100	100	STR		common graphite, minor gouge.
247.19	248.72	1.53	1.29	84.3138	0.24	15.69	sof	100	100	STR		
248.72	250.55	1.83	0.94	51.3661	0	0	sof	100	100	STR		
250.55	252.37	1.82	1.57	86.2641	0.31	17.03	sof	100	100	STR		
252.37	254.2	1.83	0.79	43.1694	0.13	7.1	sof	100	100	STR		
254.2	255.73	1.53	1.32	86.2746	0.14	9.15	sof	100	100	STR		
255.73	257.56	1.83	1.1	60.1092	0	0	sof	100	100	VWK		
257.56	258.78	1.22	0.9	73.7704	0	0	sof	100	100	SFT		
258.78	261.82	3.04	1.4	46.0525	0	0	bad	100	100	SFT	black sand to gravel, clay gouge	
261.82	263.35	1.53	0.8	52.2876	0	0	sof	100	100	STR		
263.35	264.87	1.52	0.66	43.4214	0	0	sof	100	100	VWK		
264.87	266.09	1.22	0.2	16.3934	0	0	sof	100	100	VWK		
266.09	267.92	1.83	0.4	21.8577	0	0	sof	100	100	SFT		
267.92	270.97	3.05	2.18	71.4757	0.44	14.43	sof	100	100	STR		
270.97	273.71	2.74	2.74	100.000	1.06	38.69	sof	100	100	STR		
273.71	274.93	0.97	1.22	99.9999	0.92	94.85	sof	100	100	STR		
274.93	277.06	2.13	2.13	99.9998	0.63	29.58	sof	100	100	STR		
277.06	280.11	3.05	3	98.3611	1.39	45.57	sof	100	100	STR		

GeoSpark Logger Print Logs ~ Geotechnical

Hole ID: **ORO13-06**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
280.11	280.42	0.31	0.27	87.0889	0.12	38.71	sof	100	100	STR		
280.42	283.16	2.74	2.74	100.000	2.7	98.54	sli	25	25	VSTR		
283.16	286.2	3.04	2.84	93.4208	2.25	74.01	sli	21	21	SFT		
286.2	289.26	3.06	3.06	100.000	2.98	97.39	sli	4	4	STR		
289.26	292.3	3.04	3.04	100.001	2.95	97.04	non	16	16	STR		
292.3	295.35	3.05	3.05	99.9994	2.95	96.72	una	3	3	STR		
295.35	298.4	3.05	3.05	100.000	2.64	86.56	sli	9	9	STR		
298.4	301.45	3.05	3.05	99.9994	2.2	72.13	sli	20	20	STR		
301.45	304.49	3.04	3.04	100.001	2.8	92.11	sli	15	15	STR		
304.49	306.62	2.13	2.13	99.9998	0.72	33.8	sof	50	50	SFT		Includes contact between QFP and black shale
306.62	308.91	2.29	1.73	75.5456	0.55	24.02	sof	100	100	STR		
308.91	309.82	0.91	0.71	78.0217	0.34	37.36	sof	50	50	STR		
309.82	310.59	0.77	0.77	100.001	0.11	14.29	sof	14	14	STR		
310.59	313.63	3.04	3.04	99.9997	2.15	70.72	sof	21	21	STR		
313.63	316.07	2.44	2.44	99.9999	1.9	77.87	sof	22	22	STR		
316.07	317.9	1.83	1.83	100.001	0.54	29.51	sof	16	16	STR		
317.9	320.04	2.14	2.14	99.9993	0.78	36.45	sof	40	40	STR		
320.04	321.86	1.82	1.62	89.0121	0.33	18.13	sof	16	16	STR		
321.86	322.78	0.92	0	0	0	0						
322.78	325.83	3.05	2.37	77.7052	0.75	24.59	sof	50	50	STR		
325.83	328.26	2.43	2.43	99.9991	1.86	76.54	sof	100	100	STR		
328.26	328.87	0.61	0.07	11.4757	0	0	sof	10	10	STR		
328.87	331.92	3.05	2.41	79.0159	1.8	59.02	sof	30	30	STR		
331.92	337.1	5.18	4.88	94.2086	3.65	70.46	sof	80	80	STR		
337.1	339.85	2.75	2.35	85.4545	1.3	47.27	sof	35	35	STR		
339.85	340.16	0.31	0.31	100.001	0	0	sof	10	10	STR		
340.16	341.68	1.52	1.02	67.1057	0.24	15.79	sof	76	76	STR		Sof; due to graphite on fracture surfaces.
341.68	344.12	2.44	2.43	99.5901	1.09	44.67	sof	19	19	STR		
344.12	347.11	2.99	2.97	99.3314	2.37	79.26	sli	10	10	STR		
347.11	348.69	1.58	1.48	93.6699	0.62	39.24	mode	31	31	STR		
348.69	351.74	3.05	2.74	89.8364	0.95	31.15	sli	27	27	STR		
351.74	357.84	6.1	2.62	42.9508								
357.84	359.36	1.52	1.44	94.7375	0	0	mode	100	100	STR		
359.36	359.97	0.61	0.61	99.9974	0.14	22.95	sli	11	11	STR		EOH

GeoSpark Logger Print Logs ~ Mag Susceptibility

DataSet: ORO_GF

Hole ID: ORO13-06

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
16.49	24.08	7.59	0.714	1.24	0.624	0.859				
24.08	26.22	2.14	0.176	0.185	0.027	0.129				
26.22	28.65	2.43	0.022	0.15	0.031	0.068				
28.65	30.18	1.53	0.113	0.131	0.016	0.087				
30.18	31.7	1.52	0.196	0.205	0.084	0.162				
31.7	33.22	1.52	0.074	0.102	0.033	0.07				
33.22	35.36	2.14	0.389	0.192	0.182	0.254				
35.36	36.58	1.22	0.285	0.092	0.1	0.159				
36.58	37.8	1.22	0.03	0.025	0.221	0.092				
37.8	39.93	2.13	0.19	0.034	0.088	0.104				
39.93	42.37	2.44	0.035	0.036	0.028	0.033				
42.37	45.42	3.05	0.4	0.214	0.218	0.277				
45.42	48.46	3.04	0.226	0.084	0.014	0.108				
48.46	52	3.54	0.028	0.096	1.91	0.678				
52	57	5	0.36	1.49	0.178	0.676				
57	62.3	5.3	0.182	0.137	0.147	0.155				
62.3	64	1.7	0.022	0.016	0.263	0.1				
64	66.2	2.2	0.028	0.036	0.078	0.047				
66.2	68	1.8	0.024	0.02	0.027	0.024				
68	70	2	0.016	0.027	0.081	0.041				
70	72	2	0.17	0.002	0.008	0.06				
72	74	2	0.195	0.032	0.047	0.091				
74	76	2	0.032	0.035	0.019	0.029				
76	78	2	-0.001	0.145	0.125	0.09				
78	80	2	0.017	0.003	0.02	0.013				
80	82	2	0.012	0.009	0.038	0.02				
82	84	2	0.162	0.024	0.027	0.071				
84	86	2	0.022	0.023	0	0.015				
86	88	2	0.19	0.023	0.28	0.164				
88	90	2	0.17	0.043	0.017	0.077				
90	92	2	0.02	0.024	0.044	0.029				
92	94	2	0.022	0.048	0.166	0.079				
94	96	2	0.033	0.049	0.071	0.051				
96	97.23	1.23	0.051	0.132	0.025	0.069				
97.23	98.05	0.82	0.027	0.017	0.144	0.063				
98.05	100	1.95	0.016	0.041	0.031	0.029				
100	102	2	0.013	0.009	0.008	0.01		Svan	09/08/2013	

GeoSpark Logger Print Logs ~ Mag Susceptibility

Hole ID: **ORO13-06**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
102	102.95	0.95	0.004	0	0.01	0.005				
102.95	104.85	1.9	0.003	0	0.014	0.006				
104.85	105.6	0.75	0.011	0.004	-0.008	0.002				
105.6	107	1.4	0.016	0.558	0.127	0.234				
107	108.5	1.5	0.015	0.066	0.008	0.03				
108.5	110.2	1.7	0.02	0.011	-0.001	0.01				
110.2	112.47	2.27	0.012	0.01	0.311	0.111				
112.47	113.69	1.22	0.015	0.009	0.104	0.043				
113.69	115	1.31	0.012	0.024	0.013	0.016				
115	117	2	0.009	0.16	0.009	0.059				
117	119	2	0.289	0.013	0.146	0.149				
119	121	2	0.001	0.047	0.574	0.207				
121	123	2	0.006	-0.006	0.006	0.002				
123	124.66	1.66	-0.004	0.001	0.431	0.143				
124.66	126	1.34	0.006	0.701	-0.005	0.234				
126	128	2	0.007	0.019	-0.167	-0.047				
128	130	2	0.003	-0.002	-0.002	0				
130	132	2	0.462	0.129	-0.006	0.195				
132	134	2	0.015	-0.002	0.006	0.006				
134	136	2	-0.007	0.003	-0.001	-0.002				
136	138	2	0.003	0.008	-0.009	0.001				
138	140	2	-0.011	-0.002	0.002	-0.004				
140	142	2	0.238	0.008	0.165	0.137				
142	144	2	0	0.001	-0.002	0				
144	146	2	0.123	0.002	0.002	0.042				
146	148	2	0.004	0	0	0.001				
148	150	2	-0.002	0.02	0.004	0.007				
150	152	2	0.021	0.006	0.001	0.009				
152	153	1	0.149	0.011	0.173	0.111				
153	154	1	0.013	0.005	-0.005	0.004				
154	156	2	0.005	0.013	-0.005	0.004				
156	158	2	0.016	0.007	0.187	0.07				
158	160	2	0.013	0.142	0.027	0.061				
160	162	2	0.014	0	0	0.005				
162	164	2	-0.003	-0.002	0.003	-0.001				
164	166	2	0.023	0.002	0	0.008				
166	168	2	0.122	0.001	0.004	0.042				
168	170	2	0.303	-0.171	0.522	0.218				
170	172.21	2.21	0.131	0.014	0.009	0.051				

Hole ID: **ORO13-06**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
172.21	174	1.79	0.008	0.05	0.575	0.211				
174	176	2	0.236	0.043	0.125	0.135				
176	178	2	0.216	0.269	0.009	0.165				
178	180	2	0.041	0.014	0.002	0.019				
180	182	2	0.314	0.017	0.026	0.119				
182	184	2	-0.007	0.187	-0.029	0.05				
184	186	2	0.02	0.058	0.021	0.033				
186	189	3	0.143	-0.004	0.002	0.047				
189	191	2	0.17	0.036	0.227	0.144				
191	193	2	-0.004	0.108	0.011	0.038				
193	195	2	0.216	0.083	0.015	0.105				
195	197	2	0.019	-0.003	0.022	0.013				
197	199	2	0.014	0.025	0.003	0.014				
199	201	2	0.18	0.042	0.024	0.082				
201	203	2	0.011	-0.02	0.663	0.218				
203	205	2	0.061	0.011	0.49	0.187				
205	207	2	0.002	0.004	0.505	0.17				
207	209	2	0.004	0.025	0.343	0.124				
209	211	2	0.061	0.008	-0.005	0.021				
211	213	2	0.04	0.761	0.008	0.27				
213	216	3	0.002	-0.012	0.033	0.008				
216	218	2	0.015	0.039	0.025	0.026				
218	220	2	0.445	0.008	0.011	0.155				
220	222	2	0.02	0.004	-0.007	0.006				
222	223.66	1.66	0.065	0.218	0.137	0.14				
223.66	227	3.34	0.036	0.188	0.059	0.094				
227	230	3	0.489	0.335	0.047	0.29				
230	232	2	0.358	0	0.021	0.126				
232	234	2	0.025	0.178	-0.009	0.065				
234	236	2	0.001	0.294	0.007	0.101				
236	239	3	0.017	0.034	-0.014	0.012				
239	240.66	1.66	-0.005	-0.043	-0.002	-0.017				
240.66	243	2.34	0.203	0.021	0.005	0.076				
243	245	2	0.047	0.019	-0.008	0.019				
245	247	2	0.001	0.075	0.026	0.034				
247	249	2	0.028	0.045	0.075	0.049				
249	251	2	-0.011	0.024	-0.041	-0.009				
251	254	3	-0.554	0.011	0.001	-0.181				
254	256	2	0.014	0.464	0.081	0.186				

GeoSpark Logger Print Logs ~ Mag Susceptibility

Hole ID: **ORO13-06**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
256	257.56	1.56	0.001	0.33	-0.004	0.109				
257.56	260	2.44	-0.009	-0.014	0.786	0.254				
260	263	3	0.081	-0.001	0.236	0.105				
263	266	3	0.048	0.054	0.355	0.152				
266	268.9	2.9	0.001	0.018	0.006	0.008				
268.9	271	2.1	0.015	0.659	0.405	0.36				
271	273	2	0.076	0.204	-0.003	0.092				
273	275	2	0.002	0.194	0.192	0.129				
275	277	2	0.055	0	0.032	0.029				
277	279	2	-0.019	0.01	0.033	0.008				
279	280.9	1.9	0.132	0.122	0.009	0.088				
280.9	283	2.1	0.048	0.002	0.067	0.039				
283	285	2	0.517	0.079	0.146	0.247				
285	287	2	1.17	0.062	0.015	0.416				
287	289	2	0.276	0.029	0.12	0.142				
289	291	2	-0.008	0.005	-0.014	-0.006				
291	293	2	0.351	0.252	0.069	0.224				
293	295	2	0.176	0.016	0.349	0.18				
295	297	2	0.036	0.034	0.056	0.042				
297	299	2	0.149	0.905	0.043	0.366				
299	301	2	0.171	0.03	0.035	0.079				
301	303	2	0.056	0.195	-0.007	0.081				
303	305	2	0.008	0	0.037	0.015				
305	305.75	0.75	0.015	1.06	0.061	0.379				
305.75	308	2.25	0.003	-0.008	0.009	0.001				
308	310	2	0.321	0.016	0.551	0.296				
310	312	2	0.285	0.061	0.459	0.268				
312	314	2	0.323	0.117		0.22				
314	316	2	0.07	0.005	0.014	0.03				
316	318	2	0.053	-0.029	0.012	0.012				
318	320	2	-0.001	-0.004	-0.005	-0.003				
320	322	2	0.023	0.187	0.277	0.162				
322	325	3	-0.002	0.012	0.008	0.006				
325	327	2	0.011	-0.005	0.252	0.086				
327	329	2	1.01	0.35	0.325	0.562				
329	331	2	0.03	0.028	0.012	0.023				
331	333	2	0.361	0.141	0.047	0.183				
333	335	2	0.017	0.07	-0.221	-0.045				
335	337	2	0.073	0.027	0.002	0.034				

Hole ID: **ORO13-06**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
337	339	2	0.021	0.112	0.047	0.06				
339	341	2	0.005	0.646	0.103	0.251				
341	343	2	-0.017	-0.066	0.01	-0.024				
343	345	2	0.07	0.37	0.522	0.321				
345	347	2	0.087	0.203	-0.015	0.092				
347	349	2	0.054	0.25	0.026	0.11				
349	351	2	-0.037	-0.124	0.115	-0.015				
351	353	2	-0.061	0.028	-0.007	-0.013				
353	355	2	0.027	0.074	-0.016	0.028				
355	357	2	0.271	0.024	1.77	0.688				
357	358	1	0.429	0.121	0.019	0.19				
358	359.97	1.97	1	0.146	-0.224	0.307				EOH

DataSet: ORO_GF

Hole ID: ORO13-06

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
16.49	24.08	Q186422	HC	Svan	☐	
24.08	26.22	Q186423	HC	Svan	☐	
26.22	28.65	Q186424	HC	Svan	☐	
28.65	30.18	Q186425	HC	Svan	☐	
30.18	31.7	Q186426	HC	Svan	☑	
31.7	33.22	Q186428	HC	Svan	☐	
33.22	35.36	Q186429	HC	Svan	☐	
35.36	36.58	Q186431	HC	Svan	☐	
36.58	37.8	Q186432	HC	Svan	☐	
37.8	39.93	Q186433	HC	Svan	☐	
39.93	42.37	Q186434	HC	Svan	☐	
42.37	45.42	Q186435	HC	Svan	☐	
45.42	48.46	Q186436	HC	Svan	☐	
48.46	53	Q186437	HC	Svan	☐	
53	57	Q186438	HC	Svan	☐	
57	62.3	Q186439	HC	Svan	☐	
62.3	64	Q186441	HC	Svan	☐	
64	66.2	Q186442	HC	Svan	☐	
66.2	68	Q186443	HC	Svan	☐	
68	70	Q186444	HC	Svan	☐	
70	72	Q186445	HC	Svan	☐	
72	74	Q186446	HC	Svan	☐	
74	76	Q186447	HC	Svan	☐	
76	78	Q186448	HC	Svan	☐	
78	80	Q186449	HC	Svan	☐	
80	82	Q186451	HC	Svan	☑	
82	84	Q186452	HC	Svan	☐	
84	86	Q186453	HC	Svan	☑	
86	88	Q186455	HC	Svan	☐	
88	90	Q186456	HC	Svan	☐	
90	92	Q186457	HC	Svan	☐	
92	94	Q186458	HC	Svan	☐	
94	96	Q186459	HC	Svan	☐	
96	97.23	Q186461	HC	Svan	☐	
97.23	98.05	Q186462	HC	Svan	☑	
98.05	100	Q186463	HC	Svan	☐	
100	102	Q186464	HC	Svan	☐	

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-06**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
102	102.95	Q186465	HC	Svan	☐	
102.95	104.85	Q186466	HC	Svan	☐	
104.85	105.6	Q186467	HC	Svan	☐	
105.6	107	Q186468	HC	Svan	☐	
107	108.5	Q186469	HC	Svan	☐	
108.5	110.2	Q186471	HC	Svan	☐	
110.2	111.25	Q186472	HC	Svan	☐	
111.25	112.47	Q186473	HC	Svan	☐	
112.47	113.69	Q186474	HC	Svan	☑	
113.69	115	Q186475	HC	Svan	☐	
115	117	Q186476	HC	Svan	☐	
117	119	Q186477	HC	Svan	☐	
119	121	Q186478	HC	Svan	☐	
121	123	Q186479	HC	Svan	☐	
123	124.66	Q186481	HC	Svan	☑	
124.66	126	Q186483	HC	Svan	☐	
126	128	Q186484	HC	Svan	☐	
128	130	Q186485	HC	Svan	☐	
130	132	Q186486	HC	Svan	☐	
132	134	Q186487	HC	Svan	☑	
134	136	Q186488	HC	Svan	☐	
136	138	Q186489	HC	Svan	☐	
138	140	Q186491	HC	Svan	☐	
140	142	Q186492	HC	Svan	☐	
142	144	Q186493	HC	Svan	☐	
144	146	Q186494	HC	Svan	☐	
146	148	Q186495	HC	Svan	☐	
148	150	Q186496	HC	Svan	☐	
150	152	Q186497	HC	Svan	☐	
152	153	Q186498	HC	Svan	☐	
153	154	Q186499	HC	Svan	☐	
154	156	Q186501	HC	Svan	☐	
156	158	Q186502	HC	Svan	☑	
158	160	Q186503	HC	Svan	☐	
160	162	Q186504	HC	Svan	☐	
162	164	Q186505	HC	Svan	☐	
164	166	Q186506	HC	Svan	☐	
166	168	Q186507	HC	Svan	☐	
168	170	Q186508	HC	Svan	☑	

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-06**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
170	172.21	Q186511	HC	Svan	☐	
172.21	174	Q186512	HC	Svan	☐	
174	176	Q186513	HC	Svan	☐	
176	178	Q186514	HC	Svan	☐	
178	180	Q186515	HC	Svan	☑	
180	182	Q186516	HC	Svan	☐	
182	184	Q186517	HC	Svan	☐	
184	186	Q186518	HC	Svan	☐	
186	189	Q186519	HC	Svan	☐	
189	191	Q186521	HC	Svan	☐	
191	193	Q186522	HC	Svan	☐	
193	195	Q186523	HC	Svan	☑	
195	197	Q186524	HC	Svan	☐	
197	199	Q186525	HC	Svan	☐	
199	201	Q186526	HC	Svan	☐	
201	203	Q186527	HC	Svan	☑	
203	205	Q186528	HC	Svan	☐	
205	207	Q186529	HC	Svan	☐	
207	209	Q186531	HC	Svan	☐	
209	211	Q186532	HC	Svan	☐	
211	213	Q186533	HC	Svan	☐	
213	216	Q186534	HC	Svan	☐	
216	218	Q186535	HC	Svan	☑	
218	220	Q186537	HC	Svan	☐	
220	222	Q186538	HC	Svan	☐	
222	223.72	Q186539	HC	Svan	☐	
223.72	227	Q186541	HC	Svan	☐	
227	230	Q186542	HC	Svan	☐	
230	232	Q186543	HC	Svan	☐	
232	234	Q186544	HC	Svan	☐	
234	236	Q186545	HC	Svan	☐	
236	239	Q186546	HC	Svan	☐	
239	240.66	Q186547	HC	Svan	☐	
240.66	243	Q186548	HC	Svan	☐	
243	245	Q186549	HC	Svan	☐	
245	247	Q186551	HC	Svan	☐	
247	249	Q186552	HC	Svan	☐	
249	251	Q186553	HC	Svan	☐	
251	254	Q186554	HC	Svan	☐	

GOLD FIELDS

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-06**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
254	256	Q186555	HC	Svan	☑	
256	257.56	Q186556	HC	Svan	☐	
257.56	260	Q186557	HC	Svan	☐	
260	263	Q186558	HC	Svan	☑	
263	266	Q186559	HC	Svan	☐	
266	268.9	Q186561	HC	Svan	☑	
268.9	271	Q186562	HC	Svan	☑	
271	273	Q186564	HC	Svan	☐	
273	275	Q186565	HC	Svan	☐	
275	277	Q186566	HC	Svan	☐	
277	279	Q186567	HC	Svan	☐	
279	280.9	Q186568	HC	Svan	☐	
280.9	283	Q186569	HC	Svan	☐	
283	285	Q186571	HC	Svan	☐	
285	287	Q186572	HC	Svan	☐	
287	289	Q186573	HC	Svan	☐	
289	291	Q186574	HC	Svan	☐	
291	293	Q186575	HC	Svan	☑	
293	295	Q186576	HC	Svan	☐	
295	297	Q186577	HC	Svan	☐	
297	299	Q186578	HC	Svan	☐	
299	301	Q186579	HC	Svan	☑	
301	303	Q186581	HC	Svan	☐	
303	305	Q186582	HC	Svan	☐	
305	305.75	Q186583	HC	Svan	☐	
305.75	308	Q186584	HC	Svan	☐	
308	310	Q186585	HC	Svan	☐	
310	312	Q186586	HC	Svan	☐	
312	314	Q186587	HC	Svan	☐	
314	316	Q186588	HC	Svan	☐	
316	318	Q186589	HC	Svan	☑	
318	320	Q186592	HC	Svan	☐	
320	322	Q186593	HC	Svan	☐	
322	325	Q186594	HC	Svan	☐	
325	327	Q186595	HC	Svan	☐	
327	329	Q186596	HC	Svan	☐	
329	331	Q186597	HC	Svan	☑	
331	333	Q186598	HC	Svan	☐	
333	335	Q186599	HC	Svan	☐	

GOLD FIELDS

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-06**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
335	337	Q186601	HC	Svan	☐	
337	339	Q186602	HC	Svan	☐	
339	341	Q186603	HC	Svan	☐	
341	343	Q186604	HC	Svan	☐	
343	345	Q186605	HC	Svan	☐	
345	347	Q186606	HC	Svan	☐	
347	349	Q186607	HC	Svan	☐	
349	351	Q186608	HC	Svan	☐	
351	353	Q186609	HC	Svan	☐	
353	355	Q186611	HC	Svan	☐	
355	357	Q186612	HC	Svan	☑	
357	358	Q186613	HC	Svan	☐	
358	359.97	Q186614	HC	Svan	☐	EOH

GeoSpark Logger Print Logs ~ Duplicate Samples

DataSet: ORO_GF

Hole ID: ORO13-06

From (m)	To (m)	Sample ID	Original Sample ID	QC Category	Comments
30.18	31.7	Q186427	Q186426	FD	
80	82	Ch:Q186451	Q186451	LABCHCK	
84	86	Q186454	Q186453	FD	
97.23	98.05	Ch:Q186462	Q186462	LABCHCK	
112.47	113.69	Pd:Q186474	Q186474	PREPCHK	
123	124.66	Ch:Q186482	Q186482	LABCHCK	
123	124.66	Q186482	Q186481	FD	
132	134	Ch:Q186487	Q186487	LABCHCK	
156	158	Ch:Q186502	Q186502	LABCHCK	
168	170	Q186509	Q186508	FD	
178	180	Ch:Q186515	Q186515	LABCHCK	
193	195	Ch:Q186523	Q186523	LABCHCK	
201	203	Pd:Q186527	Q186527	PREPCHK	
216	218	Q186536	Q186535	FD	
216	218	Ch:Q186535	Q186535	LABCHCK	
254	256	Ch:Q186555	Q186555	LABCHCK	
260	263	Ch:Q186558	Q186558	LABCHCK	
266	268.9	Ch:Q186561	Q186561	LABCHCK	
268.9	271	Q186563	Q186562	FD	
291	293	Ch:Q186575	Q186575	LABCHCK	
299	301	Pd:Q186579	Q186579	PREPCHK	
316	318	Q186591	Q186589	FD	
329	331	Ch:Q186597	Q186597	LABCHCK	
355	357	Ch:Q186612	Q186612	LABCHCK	

GeoSpark Logger Print Logs ~ Standards / Blanks

DataSet: ORO_GF

Hole ID: ORO13-06

Sample ID	Standard ID	Comments
Q186430	FB	
Q186440	CDN-GS-5L	
Q186450	FB	
Q186460	CDN-CM-25	
Q186470	FB	
Q186480	CDN-GS-5L	
Q186490	FB	
Q186500	CDN-CM-25	
Q186510	FB	
Q186520	CDN-GS-5L	
Q186530	FB	
Q186540	CDN-CM-25	
Q186550	FB	
Q186560	CDN-GS-5L	
Q186570	FB	
Q186580	CDN-CM-25	
Q186590	FB	
Q186600	CDN-GS-5L	
Q186610	FB	

Gold Fields Selwyn – Quicklog 2012

Hole no: ORO13-07 Logged By: SVan	Az: 030°	Dip: -60°	Target depth*:* 300 m	EOH: 272.49 m	
Start date: August 10, 2013	End date: August 14, 2013	Pad: *ORO13-N'*	E: 400880	N: 7020635	Elevation: 1250 m

Target:	*Target explained?*
ORO13-07 is located approximately 60 m NW of ORO13-N and 500m NW of B88-17 within the Oro Main Zone. ORO13-07 targets the intersection of the Caribou Pass Limestone and the Main Oro Fault zone, which was determined via surface mapping and analysis of generated cross-sections. ORO13-07 will also test the high grade soil geochemistry polygon target.	This hole successfully intersected limestone (which contained fine-grained disseminated pyrite) near the end of the hole. The limestone is of indeterminate origin, however, (potentially Caribou Pass Formation) and was proximal to a major fault zone. That being said, there was abundant faulting throughout the hole; it is uncertain if intersection of the Caribou Pass Formation limestone with the Main Oro Fault Zone was achieved.

Summary:

Location: The proposed pad ORO13-N' is located approximately 60 m along a 030 trend from ORO13-N 500m NW of B88-17 within the Oro Main Zone.

Lithology: 25.91 m of overburden overlies interbedded laminated shales with massive to thinly bedded quartzites and rare thinly bedded limestones to a depth of 246.96 m. From 246.96 m to the end of hole at 272.49 m limestone beds up to 7 m thick were interbedded with shale and rare quartzite. Several major fault zones and fault gouge zones were intersected from 58.91-65.16 m, 73.50-81.68 m, 89.00-93.72 m, and 241.24-246.96 m.

Alteration: The Shale exhibited weak fracture controlled clay alteration, and rare graphite and talc on fracture surfaces. The Quartzite displayed weak silica flooding and variable fracture controlled carbonate alteration. The limestone had rare fracture controlled pyrite.

Mineralization: Pyrite was seen ubiquitously throughout the hole with the exception of discrete barren fault zones. Pyrite was observed as nodules, lenses, beds and fine-grained disseminations within the shale, as fine-grained disseminations within the quartzite and limestone, in addition, the limestone had rare fracture controlled pyrite. Local massive pyrite was intersected from 72.35-73.50 m.

Interpretation/Comments: This hole successfully intersected limestone (which contained fine-grained disseminated pyrite) near the end of the hole. The limestone is of indeterminate origin, however, (potentially Caribou Pass Formation) and was proximal to a major fault zone. That being said, there was abundant faulting throughout the hole; it is uncertain if the intersection of the Caribou Pass Formation limestone with the Main Oro Fault Zone was achieved.

Shift	**From**	**To**	**Comments**
August 11, 2013 **0.00 – 100.59 m**	**0.00**	**25.91**	**Overburden**
	25.91	**49.37**	**Interbedded Shale and Quartzite (ShU/Qzt)** Dark grey-black, highly weathered and fractured shale beds 0.2-5 m in thickness interbedded with more competent medium-dark grey quartzite, 0.1-3 m in thickness. Shale displays minor gouge and strong fracture fabric oriented ~65° TCA with strong fracture controlled clay

			alteration and nodular, fine-grained disseminated and lenticular pyrite. Quartzite appears massive with trace fine-grained disseminated pyrite and abundant quartz stockwork veins with diffuse margins (potential silicification?) that obscures primary textures. **0.5% Pyrite.**
	49.37	**58.91**	**Massive Quartzite (Qzt)** Massive quartzite with minor fine-grained disseminated pyrite and abundant quartz stockwork veins with diffuse margins (potential silicification?) that obscures primary textures. Local, rare, unidentified pistachio green mineral staining fracture surfaces. **0.25% Pyrite**
	58.91	**61.00**	**Fault Gouge (FaultGg)** Gouge with trace pulverized core fragments typically <5 mm. Fragments appear to be a chaotic mixture of shale. quartzite and quartz veins. **No Visible Sulphides.**
	61.00	**65.16**	**Fault (Fault)** Pulverized core and rubble with minor gouge and abundant clay. Fragments of quartzite, shale and quartz veins up to 4 cm are recognized. Massive pyrite is observed with quartz in a discrete gouge zone, in addition to trace fine-grained disseminations in rare shale fragments. **0.5% Pyrite**
	65.16	**68.28**	**Sulphidic Shale (ShU)** Dark black, broken and blocky laminated to very thinly bedded shale, with abundant nodular, lenticular, fine-grained disseminated and layered pyrite, in addition to minor gouge zones. Bedding appears oriented from 20-45° TCA and parallel with variable local fracture fabric. Trace quartz (with trace carbonate) veins. Trace talc on fracture surfaces. **7% Pyrite.**
	68.28	**69.71**	**Limestone (Ls)** Medium grey, massive limestone with abundant quartz stockwork veining with weakly diffuse margins, trace fine-grained disseminated pyrite. Unit displays moderate to strong reaction with HCl. Lower contact appears conformable and is oriented at 20° TCA. **Trace Pyrite.**
	69.71	**72.35**	**Sulphidic Shale (ShU)** Dark black, broken and blocky laminated to very thinly bedded shale, with abundant nodular, lenticular, fine-grained disseminated and layered pyrite. Bedding is oriented at 45° TCA and appears parallel with variable local fracture fabric. Trace quartz (with trace carbonate) veins. Trace talc on fracture surfaces. **8% Pyrite.**
	72.35	**73.50**	**Trace Shale with Massive Pyrite (ShU)** Discrete wispy shale intervals < 2 cm (<5% rock mass) oriented ~ 45°

			TCA in massive pyrite. Unit appears dusted with very fine-grained disseminated pyrite (~90% rock mass), with discrete local massive nodular pyrite (5% rock mass). Common, weakly sheeted quartz (with trace carbonate) veins. **95% Pyrite**
	73.50	**81.68**	**Fault Gouge and Limestone (FaultGg/Ls)** Gouge with trace pulverized core fragments typically <5 mm. Fragments appear to be a chaotic mixture of shale, massive pyrite (near upper contact) limestone and quartz veins. Discrete interval from 77.11 to 78.63 m with very low recovery of broken blocky limestone with abundant quartz (trace carbonate) stockwork veins and exhibits very weak to no reaction with HCl. **Trace Pyrite**
	81.68	**89.00**	**Shale with minor Limestone Interbed (ShU/Ls)** Dark grey-black, highly fractured undifferentiated shale with minor nodular, fine-grained disseminated and lenticular pyrite. Discrete interval of limestone from 81.68-81.81 m. Abundant clay and rubble with minor gouge. **0.75% Pyrite**
	89.00	**93.72**	**Fault Gouge (FaultGg)** Gouge with minor pulverized core fragments < 1 cm of what appear to be both limestone and undifferentiated shale. Discrete large quartz vein fragments up to 9 cm appear as broken, blocky competent core. Lower contact is sharp, appears structural, planar, and oriented at ~ 50° TCA **Trace Pyrite.**
August 12, 2013 **100.59 – 165.53 m**	**93.72**	**97.80**	**Calcareous Mudstone with Discrete Quartzite and Limestone interbeds (CalMdst/Qzt/Ls)** Dark black-grey, calcareous mudstone/shale with laminated limestone and quartzite beds ~50° TCA, and discrete intervals <10 cm of Quartzite and Limestone. Shale exhibits variable reaction with HCl, from trace to moderate. Minor quartz ± carbonate veins/vein breccias and rare stockwork in quartzite. Minor elongate lenses, rare nodules and fine-grained disseminated pyrite in shale. Trace disseminated pyrite in quartzite ± limestone. **0.25% Pyrite**
	97.80	**103.03**	**Quartzite with Discrete Limestone and Shale interbeds (Qzt/Ls/ShU)** Medium grey massive quartzite with equally abundant shale and minor limestone beds. Bedding is oriented ~50-60° TCA. Shale contains nodular, minor lenticular and sparse fine-grained disseminated pyrite. Trace fine-grained disseminated pyrite in limestone and quartzite. Lower contact is ~15° TCA and displays evidence of shearing at the contact. Common quartz ± carbonate veins/vein breccias and minor stockworks in quartzite. Weak silicification in quartzite. **0.25% Pyrite**
	103.03	**116.43**	**Quartzite with Discrete Shale interbeds (Qzt/ShU)**

			Broken and blocky, medium grey, massive quartzite with abundant quartz ± carbonate veins, vein breccias and stockworks, weak silicification and discrete interbeds of shale <25 cm. Trace to 0.1% disseminated pyrite. **0.1% Pyrite**
	116.43	**129.31**	**Shale with Discrete Quartzite and thinly bedded Limestone (ShU/Qzt/Ls)** Dark grey-black, laminated shale with discrete interbedded intervals of Quartzite < 30 cm and thin beds of limestone < 4cm. Bedding appears parallel with fracture fabric oriented ~30- 47° TCA. Shale contains nodular, elongate lenses and fine-grained disseminations of pyrite. Trace pyrite in limestone and quartzite interbeds. Moderate rubble zone with abundant clay-sand-grit with minor gouge near lower contact from 123.14-129.31 m. Quartz ± carbonate veins, vein breccias and rare stockworks are observed locally more concentrated in quartzite. **0.25% Pyrite**
	129.31	**149.07**	**Shale with Discrete Limestone and Quartzite interbeds (ShU/Ls/Qzt)** Dark grey-black, laminated to very thinly bedded (~25-35° TCA) shale with discrete interbeds of limestone and quartzite < 10 cm. Shale contains nodular, elongate lenses and sparse fine-grained disseminated pyrite; limestone and quartzite display trace disseminated pyrite. Quartzite localized quartz ± carbonate veins, vein breccias and stockworks which are very rare in the limestone and shale. Trace hydrophyllic light-greenish clay on rare fracture surfaces (kaolinite?) **0.25% Pyrite**
	149.07	**150.60**	**Quartzite (Qzt)** Medium grey, massive quartzite with abundant quartz ±carbonate veins, vein breccias and stockworks with weakly diffuse vein margins. Weak silicification. Trace to 0.1% fine-grained disseminated pyrite. **0.1% Pyrite**
	150.60	**154.38**	**Shale with Discrete Quartzite interbed (ShU/Qzt)** Dark grey-black, laminated shale with beds oriented ~22° TCA with orthogonal fracture fabric oriented at ~25° TCA. Bedded, nodular, lenticular and fine-grained disseminated pyrite. Single interval of quartzite rubble from 152.8-153.3 m. Gouge proximal to quartzite rubble and lower contact. **0.25% Pyrite**
	154.38	**157.05**	**Quartzite (Qzt)** Medium grey, massive quartzite with abundant quartz ±carbonate veins, vein breccias and stockworks with weakly diffuse vein margins. Weak silicification. Trace to 0.1% fine-grained disseminated pyrite. **0.1% Pyrite**
	157.05	**164.34**	**Shale with Discrete Quartzite and Limestone interbeds (ShU/Qzt/Ls)** Dark grey-black, laminated to thinly bedded (40-50° TCA) shale with discrete quartzite and limestone laminations and interbeds <25 cm.

			Shale contains nodular, lenticular, bedded and fine-grained disseminated pyrite. Limestone and quartzite contain trace fine-grained disseminated pyrite. Local quartzite beds display increased pyrite mineralization along the contact margins with the shale. Minor quartz ± carbonate veins, vein breccias and stockwork which are locally more concentrated in quartzite beds. Potential local bioturbation textures in shale with irregular laminated quartzite. **0.25% Pyrite.**
August 13, 2013 **165.53 – 232.03**	**164.34**	**167.70**	**Quartzite with trace Shale rip-up clasts (?) (Qzt/ShU)** Medium grey, massive quartzite with abundant quartz ±carbonate veins, vein breccias and stockworks with weakly diffuse vein margins. Weak silicification. Trace to 0.1% fine-grained disseminated pyrite. Rare shale 'clasts' (?) less than 5 cm, appear elongate and sub-lenticular (almost bullet shaped) with weakly irregular margins and are sparsely distributed. **0.1% Pyrite**
	167.70	**179.94**	**Laminated to thinly interbedded Quartzite, Shale and minor Limestone. (ShU/Qzt/Ls)** Medium-dark, grey-black unit with abundant alternating laminations, very thin beds and thinly bedded quartzite, shale and limestone. Bedding is inconsistently between 25-50° TCA; with commonly undulating, irregular shapes resembling soft sediment deformation textures (more common in limey intervals).Localised quartz-carbonate veins and minor vein breccia or stockworks appear more concentrated in quartzite and limestone interbeds over shale. Rare pyrite lenses, nodules, fine-grained disseminations and beds within shale. Trace to minor fine-grained disseminated pyrite in quartzite and limestone. **0.1% Pyrite**
	179.94	**184.40**	**Quartzite (Qzt)** Medium grey, massive quartzite with abundant quartz ±carbonate veins, vein breccias and stockworks with weakly diffuse vein margins. Weak silicification. Common fracture controlled pyrite ± trace arsenopyrite visible as very thin anastamosing and discontinuous stringer veins, and on fracture surfaces. Pyrite 'stringers' cross-cut quartz ± carbonate veins. Interval appears to display weak reaction with HCl, but difficult to discern with density of quartz-carbonate veins; potential carbonate alteration of groundmass? **0.5% Pyrite, Trace Arsenopyrite**
	184.40	**190.27**	**Shale with very thinly bedded Quartzite (ShU/Qzt)** Dark grey-black, laminated to very thinly bedded (45-50° TCA) shale with discrete very thinly bedded quartzite displaying locally concentrated disseminated and aggregate pyrite, in addition to deformation characteristics, appearing as fluidal 'flames' into the shale. Shale contains minor nodular, lenticular, bedded and fine-grained disseminated pyrite. Trace graphite and talc on fracture surfaces.

			0.5% Pyrite
	190.27	192.20	**Quartzite (Qzt)** Medium grey, massive, granular quartzite with abundant disseminated and aggregate pyrite ± trace arsenopyrite and weak fracture controlled carbonate alteration (?). Unit exhibits weak reaction with HCl. The exact nature of the carbonate is difficult to discern with confidence, but appears to be related to carbonate healed microfractures. Weak silica flooding is observed. Minor quartz-carboante veins and abundant carbonate microfractures/stringers. Lower contact is oriented ~45° TCA, and appears conformable, but with a weak local shear fabric present in shale. **3% Pyrite, Trace Arsenopyrite**
	192.20	204.83	**Shale with thinly bedded Quartzite (ShU/Qzt)** Dark grey-black, laminated to thinly bedded (42-50° TCA, shifting to 25-32° TCA proximal to lower contact) shale with discrete thinly bedded quartzite displaying locally concentrated disseminated and aggregate pyrite, in addition to deformation characteristics, appearing as fluidal 'flames' into the shale. Quartzite interbeds also display weak reaction with HCl, interpreted to be a result of quartz-carbonate veins and carbonate healed microfractures. Shale contains minor nodular, lenticular, bedded and fine-grained disseminated pyrite. Sparse quartz-carbonate veins locally concentrated within quartzite interbeds. Trace graphite and talc on fracture surfaces. **0.5% Pyrite**
	204.83	210.80	**Quartzite (Qzt)** Medium grey, massive quartzite, which is broken and blocky near the top of the interval with minor clay on fracture surfaces, and more competent near the lower contact. Quartzite contains trace fine-grained disseminated pyrite and common quartz-carbonate veins, vein breccias and stockworks, which are more abundant near the upper contact. Localized graphite/bitumen(?) present on fractures which cross-cut quartz-carbonate veins and exhibit sinuous, zig-zag appearance reminiscent of capillaries/blood vessels. **Trace-0.1 % Pyrite.**
	210.80	219.00	**Shale and Quartzite interbeds (ShU/Qzt)** Dark grey-black shale with discrete sand-rich beds and laminations interbedded with medium grey, massive quartzite with rare shale rip-up clasts/lenses. Contacts between shale and quartzite are highly variable (18-50° TCA) and commonly undulating with irregular deformation structures. Disseminated pyrite patches in quartzite appear to cross-cut quartz-carbonate veins, vein breccias and stockworks. Shale contains elongate nodules, lenses, beds, and fine-grained disseminated pyrite. Sandy intervals in shale exhibit locally increased pyrite content. **0.5% Pyrite**

	219.00	**241.24**	**Shale with thinly bedded Quartzite (ShU/Qzt)** Dark grey-black, laminated to thinly bedded (22-35° TCA) shale with discrete thinly bedded quartzite displaying locally concentrated disseminated pyrite. Local fracture fabric/foliation oriented orthogonal to bedding (22-49° TCA) which becomes very strongly developed near lower contact with fault zone. Quartzite interbeds exhibit undulating bedding and variable, local weak reaction with HCl, interpreted to be a result of quartz-carbonate veins and carbonate healed microfractures. Shale contains minor nodular, lenticular, bedded and fine-grained disseminated pyrite. Sparse quartz-carbonate veins locally concentrated within quartzite interbeds, which in rare instances appear in a tic-tac-toe pattern. Trace graphite and talc on fracture surfaces. **0.5% Pyrite**
August 14, 2013 232.03 – 272.49 m	**241.24**	**246.96**	**Fault (Fault) with minor Gouge** Broken, blocky core with rare whole fragments >3c, which exhibit strong foliation fabric ~30-40° TCA amongst abundant rubble, clay, sand, grit and minor gouge. Discrete gouge with small modal pulverized core fragments from 243.50-244.15m. Trace fine-grained disseminated pyrite visible in shale fragments. **Trace Pyrite**
	246.96	**251.00**	**Limestone (Ls)** Medium grey, massive, medium-grained limestone with sparse 'clastic' texture; angular to sub-angular clasts of limestone that appears fine-grained are dispersed chaotically throughout interval. Lower contact with shale is sharp, oriented ~ 30° TCA and contains small angular to bullet shaped 'clasts' or 'lenses' (?) of shale within the limestone. Common quartz-carbonate veins, vein breccias and stockworks are observed. Minor fracture controlled, very fine-grained pyrite and trace very fine-grained pyrite are also observed. Rare stylolitic (?sp?) graphite-bitumen ± pyrite. **0.1% Pyrite**
	251.00	**256.76**	**Shale (ShU)** Dark grey-black, laminated to thinly bedded (23-32° TCA) shale with rare quartzite beds < 4 cm and nodular, lenticular, bedded and fine-grained disseminated pyrite. Minor quartz-carbonate veins. Pyrite nodules and beds are often host to these veins which are truncated along the margins of the pyrite. **0.75% Pyrite.**
	256.76	**264.00**	**Limestone (Ls)** Medium grey, massive, medium-grained limestone. Upper (36° TCA) and lower (50° TCA) contacts with shale are both sharp and contain small angular to bullet shaped 'clasts' or 'lenses' (?) of shale within the limestone (rip-up clasts?). Rare thin beds of shale < 4 cm are observed displaying similar characteristics to the upper and lower contacts. Common quartz-carbonate veins, vein breccias and stockworks are observed. Minor fracture controlled, very fine-grained

			pyrite and trace very fine-grained pyrite are also observed. Rare stylolitic (?sp?) graphite-bitumen ± pyrite. **0.1% Pyrite**
	264.00	**270.73**	**Shale with Discrete Quartzite and Graded Limestone beds (ShU/Qzt/Ls)** Dark grey-black, laminated to thinly bedded (15-42° TCA) shale with rare quartzite beds < 3 cm, a graded limestone bed from 265.32-265.65m, which fines downhole and contains very thin beds, lenses/clasts of shale near lower contact (~40° TCA). Shale contains abundant nodular, lenticular, bedded and fine-grained disseminated pyrite. Minor quartz-carbonate veins. Pyrite nodules and beds are often host to these veins which are truncated along the margins of the pyrite. **1.0 % Pyrite.**
	270.73	**272.49**	**Limestone (Ls)** Medium grey, massive, medium-grained limestone. Common quartz-carbonate veins, vein breccias and stockworks are observed. Minor fracture controlled, very fine-grained pyrite and trace very fine-grained pyrite are also observed. Rare stylolitic (?sp?) graphite-bitumen ± pyrite. **0.1% Pyrite**

GeoSpark Logger Print Logs ~ Collars

DataSet: **ORO_GF**

Depth (m)	Hole Type	Core Diamete	Grid ID	East	North	Elevation	Survey Method	Survey Date	Survey By	Date Started	Date Completed	Logged By	Prospect	Validated By
Hole: ORO13-07														
272.49 m	DD	HQ/NQ	UTM09N_NAD83	400880	7020635	1250	GPS	07/08/2013	Svan	11/08/2013	14/08/2013	Svan	Main Zone	Svan

GeoSpark Logger Print Logs ~ DH Surveys

DataSet: ORO_GF

Hole ID: ORO13-07

Depth (m)	Survey Method	Grid ID	Dip	Surv. Tool Azimuth	Magnetic Declination	Corrected Azimuth	Magnetics	Date Surveyed	Survey Instrument	Bad Reading	Comments
0	COLL	UTM09N_NAD83	-60	30	0	30		16/08/2013	CMP	☐	
29.57	EZ Shot	UTM09N_NAD83	-59.4	5	22.5	27.5		14/08/2013	EZ	☐	
67.97	EZ Shot	UTM09N_NAD83	-59.2	4.7	22.5	27.2		12/08/2013	EZ	☐	
134.42	EZ Shot	UTM09N_NAD83	-59.1	5.8	22.5	28.3		12/08/2013	EZ	☐	
195.07	EZ Shot	UTM09N_NAD83	-58.6	4.8	22.5	27.3		15/08/2013	EZ	☐	
252.37	EZ Shot	UTM09N_NAD83	-58.9	6.6	22.5	29.1		16/08/2013	EZ	☐	

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Signed: _______________

DataSet: ORO_GF

Hole ID: ORO13-07

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	0	25.91	Overburden	Overburden (OB)	

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	25.91	49.37	Shale	undifferentiated shale	drk gry-blk, highly weathered/fractured shale w/ trace graphite on fracsurf. Fracfab ~65TCA. Nod/lens/fg-diss py.

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DataSet: **ORO_GF**

Hole ID: **ORO13-07**

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
25.91	49.37	Py	0.5	DIS										Fg diss, nodular, lenticular and laminated pyrite in shale, trace fg diss py in Ls.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
25.91	26.82	FLTG		
26.82	30.92	RUB	S	
30.92	30.98	FLTG		
31.06	31.13			50
31.13	31.39	FLT		
31.39	32.92	RUB		
32.92	33.5	FLTG		
33.5	37.15	RUB		
37.15	38.15	FLTG		
38.15	39.52	RUB		
39.52	39.62	FLTG		45
39.62	41.69	RUB		
41.69	41.76	FOL		68
41.76	43.28	FLTG		
43.28	44.55	FLT		
45.95	46.63	FLTG		
47.75	48.48	FLT		
48.62	48.7	FLTG		30
49	50	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	49.37	58.91	Sandstone	Quartzite - nonspecific	Massive,Qtzite with abundant qtz stkrk vns w/ diffuse margins. Trace diss pyrite.

DataSet: ORO_GF

Hole ID: ORO13-07

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
49.37	58.91	Py	0.25	DIS										Minor fg diss pyrite.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
25.91	58.91	VQtz	±carb	2										Rare qtz-carb veins in shale, abundant qtz ztockwork (with trace carb) veins in limestone, with diffuse margins.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
50	55.17	RUB		
55.17	55.3	FLT		
55.3	57.55	RUB		
57.55	58.5	FLT		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	58.91	61	Fault Gouge	Fault gouge (UTG)	Gouge with trace pulverized core fragments typically <5 mm. Fragments appear to be a chaotic mixture of shale, quartzite and quartz veins.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
58.91	61	UnMin	0											No visible sulphides.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
58.91	61	FLTG		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	61	65.16	Fault Breccia	Fault (UT)	Pulverized core and rubble with minor gouge and abundant clay. Fragments of quartzite, shale and quartz veins up to 4 cm are recognized. Trace py.

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DataSet: **ORO_GF**

Hole ID: **ORO13-07**

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
61	65.16	Py	0.5	MASS										chuncks of what appears to be massive pyrite in gouge, minor trace diss py in rare core fragments.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
58.91	65.16	NoVeins	n/a											No intact veins, some vein fragments in fault zone however.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
61	65.16	FLT		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	65.16	68.28	Shale	undifferentiated shale	Drk gry-blk, brkn, blky w/ minor gouge. Lam/vthnbedded(20-45TCA) pyrite-rich shale. Abundant Nod/lens, fg-diss and layered py.Trace qtz veins. Trace fracsurf talc. Bedding parallel fracfab.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
65.16	68.28	Py	7	DIS										Abundant fg diss, nodular, lenticular and laminated py.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
65.16	68.28	VQtz	±carb	0.1										trace qtz +/- carb veins in shale.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
65.16	67.74	RUB		
67.74	68	FLTG		
68	68.28	BED		35

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	68.28	69.71	Carbonate	Limestone - nonspecific	Med, gry massive Ls w/ abundant qtz stockwork veins w/ diffuse margins. Trace fg diss py. Mid rxn w/ HCl. Lwr cntct conformable ~ 20TCA.

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DataSet: ORO_GF

Hole ID: ORO13-07

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
68.28	69.71	Py	0.05	DIS										Trace diss py.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
68.28	69.71	VQtz	±carb	10										Abundant qtz veins with weakly diffuse margins, and trace carb (diff to discern in carb Ls unit...

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	69.71	72.35	Shale	undifferentiated shale	Drk gry-blk, lam/vthnbed (45 TCA parallel with fracFab) shale w/ abundant nod/lens/fg diss/layered py.Trace qtz veins. Trace talc on fracsurf.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
69.71	72.35	Py	8	DIS										Abundant fg diss, nodular, lenticular and laminated py.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	72.35	73.5	Shale	undifferentiated shale	Discrete lam/vthnbded (45TCA) shale intervals <2 cm in massive pyrite. Unit is 95% Pyrite.

DataSet: ORO_GF

Hole ID: ORO13-07

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
72.35	73.5	Py	95	MASS										fg diss, massive nodular py makes up 95 % of interval (essentially massive).

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
69.71	73.5	VQtz	±carb	0.5										Minor qtz +/- carb veins, local sheeted veins in massive pyrite (72.35-73.5m).

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
68.28	73.5	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	73.5	81.68	Fault Gouge	Fault gouge (UTG)	Gouge with pulverized fragments of Ls, Shale and massive py from previous interval. Discrete interval of brkn, blky Ls from 77.11-78.63m w/ low recovery.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
73.5	81.68	Py	0.05	DIS										trace pyrite.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
73.5	81.68	NoVeins	n/a											no intact veins.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
73.5	77.11	FLTG		
77.11	78.63	RUB		
78.63	81.68	FLTG		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	81.68	89	Shale	undifferentiated shale	Drk gry-blk highly fractured undiff shale w/ minor nod/lens/layered and fg-diss py. Discrete Ls interval 81.68-81.81m. Abundant clay and rubble w/ minor gouge.

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DataSet: ORO_GF

Hole ID: ORO13-07

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
81.68	89	Py	0.25	DIS										Minor fg diss, nodular, lenticular and trace laminated pyrite.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
81.68	89	VQtz	±carb	0.1										Trace qtz veins in shale, abundant qtz veins in Ls (<14 cm though).

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
81.68	81.71	RUB		
81.71	82.05	FLTG		
82.05	83.18	RUB		
83.18	83.21	FLTG		
83.21	89	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	89	93.72	Fault Gouge	Fault gouge (UTG)	Gouge with minor pulverized fragments of Ls+ShU. Discrete qtz vein fragments <9cm. Lwr contact sharp, strctrl ~50TCA. Trace pyrite in gouge.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
89	93.72	Py	0.05	DIS										trace pyrite.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
89	93.72	NoVeins	n/a											No intact veins.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
89	93.72	FLTG		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	93.72	97.8	Shale	Calcareous mudstone	Drk gry-blk calcareous shale w/ lam/vthn qtzite-limestone beds (~50TCA). Trace-0.25% py. Minor qtz±carb vn/vn breccia.

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Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
93.72	95.6	RUB		
95.6	95.62	BED		55
96	97.3	FLT		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	97.8	103.03	Sandstone	Quartzite - nonspecific	Qzt w/ ShU and Ls interbeds < 30cm. Common qtz±carb vn/vnBX. Trace-0.25% py. Bedding ~ 50-60TCA.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
93.72	103.03	Py	0.25	DIS										Shale contains nodules, lenses, and beds of fine-grained diss py. Qtz/Ls display trace fg-diss py.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
99	101.8	RUB		
101.8	101.81	FOL		30
101.81	111.86	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	103.03	116.43	Sandstone	Quartzite - nonspecific	Broken and blocky, medium grey, massive quartzite with abundant quartz-carbonate veins, vein breccias and stockworks, weak silicification and discrete interbeds of shale <25 cm. Trace to 0.1% disseminated pyrite.

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Hole ID: ORO13-07

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
103.03	116.43	Py	0.1	DIS										Trace diss fg py.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
111.86	113.08	FLT		
113.08	120	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	116.43	129.31	Shale	undifferentiated shale	Drk gry-blk lam/thnbed shale w/ discrete interbeds of Qzt(<30cm) and Ls(<4cm). Nod/len/fg-diss py in shale, trace fg-diss py in Qzt and Ls. Bedding parallel w/ fracfab ~ 30-47TCA. Qtz±carb vn/vnBX and minor stkwrk.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
120	120.01	BED		30
122.05	122.06			47
123.14	124.6	RUB		
124.6	129.31	FLT		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	129.31	140.07	Shale	undifferentiated shale	Drk gry-blk, lam-vthn bedded (25-35TCA) shale w/ nod/len/bedded/fg-diss py. Contains discrete beds of Ls and Qtz with trace py and qtz±carb vn/vnBX, minor stkwrk.

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Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
116.43	149.07	Py	0.25	DIS										Shale contains nodules, lenses, and beds of fine-grained diss py. Qtz/Ls display trace fg-diss py.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
129.31	133.06	RUB		
133.06	133.07	BED		45
133.07	135.8	RUB		
135.8	136.05	FLTG		
136.05	141.23	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	140.07	150.6	Sandstone	Quartzite - nonspecific	Medium grey, massive quartzite with abundant quartz ±carbonate veins, vein breccias and stockworks with weakly diffuse vein margins. Weak silicification. Trace to 0.1% fine-grained disseminated pyrite.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
149.07	150.6	Py	0.1	DIS										Minor fg-diss py

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
141.23	141.24	BED		36
144.39	144.4			35
147.17	147.18	FOL		40

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	150.6	154.38	Shale	undifferentiated shale	Drk gry-blk lam(22TCA) shale with fracfab(25TCA), lent/nod/bedded/fg-diss py.

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Hole ID: ORO13-07

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
150.6	154.38	Py	0.25	DIS										Minor nod/lens/bed and fg-diss py.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
150.63	150.64	FOL		25
150.64	150.65	BED		22
151.98	154.38	FLT		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	154.38	157.05	Sandstone	Quartzite - nonspecific	Medium grey, massive quartzite with abundant quartz ±carbonate veins, vein breccias and stockworks with weakly diffuse vein margins. Weak silicification. Trace to 0.1% fine-grained disseminated pyrite.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
154.38	157.05	Py	0.1	DIS										Trace to minor fg-diss py

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
154.38	160.44	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	157.05	164.34	Shale	undifferentiated shale	Drk gry-blk lam/vthnbedded (40-50TCA) sahle w/ Qzt and Ls lam and interbeds <25cm. Nod/len/bed/fg-diss py in shale. Trace fg-diss py in Qzr and Ls.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
157.05	164.34	Py	0.25	DIS										Minor nod/lens/bed/fg-diss in shale, minor to trace fg-diss in qzt and Ls

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
160.44	160.45	BED		38

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	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	164.34	167.7	Sandstone	Quartzite - nonspecific	Med grey, massive Qzt w/ abundant qtz+/-carb vn/vnBX/stkwrk and rare, angular, clasts (rip-up?) of shale < 5cm.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	164.34	164.35	CS		42
	164.35	164.36	BED		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	167.7	179.94	Sandstone	Quartzite - nonspecific	Alternating lam'ns to thnbeds of Shale, Qzt and Ls, displaying veriable bedding (25-50TCA). Minor nod/lens/bed fg-diss py in shale, and minor fg-diss in Qzt-Ls. Sft-sed def'm'n txts in Ls-shale-qtz lams?

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	164.34	179.94	Py	0.1	DIS										Trace to minor fg-diss py in shale/qzt/Ls, and rare nod/lens/beds in shale.

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	93.72	179.94	VQtz	±carb	0.75										Qtz+/-carb vns/vnBX/stkwrks which cross-cut py mineralization and display local increased concentration w/in quartzite and minor Ls (higher brittle deformation relative to shale?)

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	169.9	169.91	BED		32
	172.18	172.19			47
	173.5	173.75	FLT		
	174.6	175.49			
	175.84	176.19			
	176.22	176.23	BED		50
	176.56	176.57			37
	178.31	179.94	FLT		

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Hole ID: **ORO13-07**

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	179.94	184.4	Sandstone	Quartzite - nonspecific	Medium grey, massive quartzite with abundant qtz ±carb veins, vein breccias and stockworks with weakly diffuse vein margins. Weak silicification. Common FraCon Py±Apy stringers.Py x-cut qtz-carb. Mod rxn w/ HCl??

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	179.94	184.4	Py	0.5	DIS										Minor fg-diss, and more common pyrite in stringers and on fracture surfaces.

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	179.94	184.4	VQCarb	n/a	2	Vpy		0.1							Qtz-carb vns/vnBX/stkwrks x-cut by pyrite-apy stringers and pyrite fracture infill.

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	184.4	190.27	Shale	undifferentiated shale	Drk gry-blk lam/vthnbed(45-50TCA) shale w/ vthnbded Qzt w/ increased fg-diss py and defrmt'n txts. Nod/len/bed/fg-diss py in shale. Tr fracon graph-talc.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	184.4	190.27	Py	0.5	DIS										Nod/len/bed/fg-diss py in shale. Locally increased fg-diss py in Qzt beds.

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	184.8	184.81	FOL		42
	184.81	184.82	BED		25
	188.29	188.3			45
	188.9	190.4	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	190.27	192.2	Sandstone	Quartzite - nonspecific	Med gry, mass Qzt w/ abundant diss/agg Py±tr-Apy. Wk HCl rxn (Fracon carb alt?). Wk silica flooding. Common qtz-carb vn/vnBX/stkwrk. Lwr cntct ~45TCA, conformable w/ local shear in shale.

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DataSet: ORO_GF

Hole ID: ORO13-07

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
190.27	192.2	Py	3	DIS										Abundant fg-diss and aggregate pyrite, trace py on fracture surfaces.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	192.2	204.83	Shale	undifferentiated shale	Drk gry-blk lam/thnbed (42-50TCA at upper and 25-32 TCA at lwr cntct) shale w/ thnbded Qzt w/ increased fg-diss py and defrmt'n txts and weak rxn with HCl (fracon carb alt?). Shale has minor nod/len/bed/fg-diss py.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
192.2	204.83	Py	0.5	DIS										Nod/len/bed/fg-diss py in shale. Locally increased fg-diss py in Qzt beds.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
184.4	204.83	VQCarb	n/a	0.75										Minor qtz-carb veins/vein breccias/stockworks which are cross-cut by pyrite disseminated patches.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
192.2	192.21	CS		45
192.21	192.22	FOL		50
192.59	192.6	BED		35
196.42	196.43			42
197.7	197.73			50
199.05	202.3	RUB		
202.3	202.31	BED		32
202.31	203.34	RUB		
203.34	203.35	BED		28
203.66	208.09	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	204.83	210.8	Sandstone	Quartzite - nonspecific	Med gry, mass Qzt w/ trace fg-diss Py. Wk silica flooding. Common qtz-carb vn/vnBX/stkwrk. Minor graph/bitumen frac/microveins w/ irregular zig-zag habit.

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DataSet: ORO_GF

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Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
204.83	210.8	Py	0.1	DIS										Trace-minor fg-diss py.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
204.83	210.8	VQCarb	n/a	1	Voth		0.1							Qtz-carb veins/vein breccias/stockworks which are cross-cut by pyrite disseminated patches. Minor graph/bitumen frac/veinlets w/ irregular characteristic.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	210.8	219	Shale	undifferentiated shale	Shale w/ local sandy beds/lams(18-50TCA) interbedded w/ lrg intrvls of massive Qzt. Diss py in Qzt x-cut qtz-carb vn/vnBX/stkwrks. Shale cntains lens/nod/bed/fg-diss py.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
210.8	210.97	RUB		
213.72	213.73	BED		42
213.73	222.2	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	219	241.24	Shale	undifferentiated shale	Drk gry-blk lam/thnbed (22-35TCA) shale w/ discerete thnbeds of Qzt displaying local increased py and variable weak rxn w/ HCl (Fracon Carb alt?). Shale contains minor nod/lens/bed/fg-diss py and wk fol'n orthgnl to bedding (22-49TCA)<-str near fault.

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DataSet: ORO_GF

Hole ID: ORO13-07

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
210.8	241.24	Py	0.5	DIS										Nod/len/bed/fg-diss py in shale. Locally increased fg-diss py in Qzt beds.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
222.2	222.21	FOL		38
222.21	222.22	BED		35
224.04	224.05			22
224.05	226	RUB		
226	226.01	FOL		50
226.01	229.83	RUB		
229.83	229.84	FOL		24
232.66	232.67	BED		45
232.67	233.9	RUB		
233.9	233.91	FOL		55
233.91	235.19	RUB		
235.19	236.22	FLTG		
236.22	239.08	RUB		
239.08	239.09	BED		13
239.09	241.24	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	241.24	246.96	Tectonic/Fault Rock - Undifferentiated	Fault (UT)	rare whole fragments >3c, which exhibit strong foliation fabric ~30-40° TCA amongst abundant rubble, clay, sand, grit and minor gouge. Discrete gouge with small modal pulverized core fragments from 243.50-244.15m

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
241.24	246.96	Py	0.05	UNKN										Trace pyrite in gouge and fragments of shale in fault zone.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
241.24	243.54	FLT		
243.54	244.75	FLTG		
244.75	246.96	FLT		

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	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	246.96	251	Carbonate	Limestone - nonspecific	Med grey, mg, massive Ls. Fracon, and minor fg-diss py. Graph/bit-py stylolitic fractures/stringers. Qtz-carb vn/vnBX/stkwrks. Sparse sub-angular clasts of fg Ls. Lwr cntct has shale lenses/rip-ups?

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	246.96	251	Py	0.1	DIS										trace very fine grained disseminated and minor fracture controlled py.

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	251	256.76	Shale	undifferentiated shale	Dark grey-black, laminated to thinly bedded (23-32° TCA) shale with rare quartzite beds < 4 cm and nodular, lenticular, bedded and fine-grained disseminated pyrite. Minor quartz-carbonate veins.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	251	256.76	Py	0.75	DIS										large nodules, elongate lense, very thin beds and fine-grained disseminated pyrite.

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	251	251.01	CS		32
	251.01	252.65	RUB		
	252.65	252.66	BED		32
	252.66	256	RUB		
	256	256.01	BED		22

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	256.76	264	Carbonate	Limestone - nonspecific	Med grey, mg, massive Ls. Fracon, and minor fg-diss py. Graph/bit-py stylolitic fractures/stringers. Qtz-carb vn/vnBX/stkwrks. Sparse thnlybed'd shale.

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DataSet: ORO_GF

Hole ID: ORO13-07

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
256.76	264	Py	0.1	DIS										trace very fine grained disseminated and minor fracture controlled py.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	264	270.73	Shale	undifferentiated shale	Dark grey-black, laminated to thnly bedded (23-32° TCA) shale with rare quartzite beds <3 cm, graded Ls beds, and nodular, lenticular, bedded and fine-grained disseminated pyrite. Minor quartz-carbonate veins.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
264	270.73	Py	0.75	DIS										large nodules, elongate lense, very thin beds and fine-grained disseminated pyrite.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
264	264.01	CS		50
264.01	264.02	FOL		
265.65	265.66	BED		38
269.87	269.88			29

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	270.73	272.49	Carbonate	Limestone - nonspecific	Med-gry, mg, mass limestone. Common qtz-carb vn/vnBX/stkwrk. Minor fracture controlled, very fine-grained pyrite and trace very fine-grained pyrite are also observed. Rare stylolitic (?sp?) graphite-bitumen ± pyrite.

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Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
270.73	272.49	Py	0.1	FRA										trace very fine grained disseminated and minor fracture controlled py.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
210.8	272.49	VQCarb	n/a	0.75										Minor qtz-carb veins/vein breccias/stockworks, which are cross-cut by pyrite disseminated patches. Veins appear locally more abundant within pyrite nodules, quarztite and limestone interbeds

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

DataSet: ORO_GF

Hole ID: ORO13-07

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
25.91	26.82	0.91	0.08	8.79121	0	0	bad	30	30	SFT		
26.82	28.35	1.53	1.09	71.2418	0	0	mode	100	100	VWK		
28.35	28.96	0.61	0.35	57.3772	0	0	mode	100	100	VWK		
28.96	30.48	1.52	0.97	63.8158	0	0	mode	100	100	STR		
30.48	31.39	0.91	0.83	91.2088	0	0	sof	100	100	VWK		
31.39	32.92	1.53	0.36	23.5294	0	0	mode	100	100	STR		
32.92	33.83	0.91	0.37	40.6592	0	0	mode	100	100	STR		
33.83	34.44	0.61	0.56	91.8038	0	0	sli	100	100	STR		
34.44	35.36	0.92	0.58	63.0433	0	0	sli	100	100	STR		
35.36	35.97	0.61	0.56	91.8032	0	0	sli	100	100	STR		
35.97	37.19	1.22	0.67	54.9182	0	0	mode	100	100	STR		
37.19	38.71	1.52	0.64	42.1053	0.12	7.89	mode	100	100	VWK		
38.71	39.62	0.91	0.68	74.7253	0	0	mode	100	100	STR		
39.62	40.54	0.92	0.71	77.1737	0	0	mode	100	100	VWK		
40.54	43.28	2.74	0.18	6.56935	0	0	bad	100	100	SFT		
43.28	43.56	0.28	0.16	57.1423	0	0	mode	45	45	STR		
43.56	44.2	0.64	0.39	60.9376	0	0	sof	100	100	SFT		
44.2	45.42	1.22	0.78	63.9346	0.1	8.2	sli	100	100	STR		
45.42	46.63	1.21	0.31	25.6198	0	0	sof	100	100	VWK		
46.63	46.94	0.31	0.23	74.1941	0.11	35.48	sli	38	38	STR		
46.94	48.46	1.52	0.57	37.5	0.27	17.76	mode	100	100	STR		
48.46	49.37	0.91	0.86	94.5055	0	0	mode	100	100	STR		
49.37	50.9	1.53	1.14	74.5097	0.46	30.07	sli	100	100	STR		
50.9	52.43	1.53	1.47	96.0785	0.38	24.84	sli	35	35	STR		
52.43	53.95	1.52	1.42	93.4210	0.47	30.92	sli	30	30	STR		
53.95	55.17	1.22	1.33	109.017	0.53	43.44	sli	25	25	STR		
55.17	55.78	0.61	0.39	63.9344	0	0	sli	50	50	STR		
55.78	57.3	1.52	1.28	84.2105	0.27	17.76	sli	65	65	STR		
57.3	58.83	1.53	0.62	40.5228	0	0	mode	100	100	STR		
58.83	60.35	1.52	1.2	78.9475	0	0	bad	1000	1000	SFT		
60.35	61.87	1.52	0.55	36.1842	0	0	sof	1000	1000	VWK		
61.87	63.09	1.22	0.81	66.3934	0	0	sof	1000	1000	VWK		
63.09	64.92	1.83	1.19	65.0274	0	0	sof	1000	1000	VWK		
64.92	66.44	1.52	0.84	55.263	0	0	mode	100	100	STR		
66.44	67.97	1.53	1.05	68.6275	0	0	mode	100	100	STR		
67.97	69.49	1.52	1.35	88.816	0.1	6.58	mode	100	100	STR		
69.49	71.01	1.52	1.44	94.7366	0.29	19.08	mode	100	100	STR		

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Hole ID: **ORO13-07**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
71.01	72.23	1.22	1.07	87.7048	0	0	mode	100	100	STR		
72.23	73.76	1.53	1.22	79.7386	0.44	28.76	mode	100	100	VSTR		
73.76	75.28	1.52	0.76	50.0001	0	0	sof	100	100	SFT		
75.28	77.11	1.83	1.2	65.5737	0	0	sof	100	100	SFT		
77.11	78.83	1.72	0.43	25	0.1	5.81	mode	100	100	STR		
78.83	80.16	1.33	0.85	63.9097	0	0	sof	100	100	SFT		
80.16	81.68	1.52	1.41	92.7634	0	0	sof	100	100	SFT		
81.68	83.21	1.53	1.17	76.4707	0	0	mode	100	100	VWK		
83.21	84.73	1.52	1.17	76.9735	0	0	mode	100	100	VWK		
84.73	85.95	1.22	1.15	94.2628	0	0	mode	100	100	VWK		
85.95	87.17	1.22	1.07	87.7048	0	0	mode	100	100	VWK		
87.17	88.08	0.91	0.55	60.4393	0	0	mode	100	100	VWK		
88.08	89.3	1.22	0.9	73.7704	0	0	mode	100	100	VWK		
89.3	90.83	1.53	1	65.3595	0	0	sof	100	100	SFT		
90.83	92.35	1.52	0.74	48.6843	0	0	sof	100	100	SFT		
92.35	93.87	1.52	1.08	71.0524	0	0	sof	100	100	SFT		
93.87	95.4	1.53	1.42	92.8105	0.1	6.54	mode	100	100	STR		
95.4	96.92	1.52	1.5	98.6844	0.27	17.76	mode	100	100	STR		
96.92	98.45	1.53	1.5	98.0393	0.11	7.19	sli	70	70	STR		
98.45	99.97	1.52	1.5	98.6839	0.24	15.79	mode	100	100	STR		
99.97	100.58	0.61	0.33	54.0983	0	0	sli	45	45	STR		
100.58	102.11	1.53	1.27	83.0066	0.34	22.22	sli	85	85	STR		
102.11	103.02	0.91	0.74	81.3190	0	0	sli	48	48	STR		
103.02	105.77	2.75	2.66	96.7273	0.92	33.45	sli	28	28	STR		
105.77	106.07	0.3	0.33	109.999	0.12	40	sli	20	20	STR		
106.07	109.12	3.05	2.28	74.7540	0.68	22.3	sli	100	100	STR		
109.12	111.86	2.74	2.29	83.5767	0.27	9.85	sli	100	100	STR		
111.86	113.08	1.22	0.97	79.5081	0	0	sli	100	100	STR		
113.08	115.21	2.13	1.72	80.7513	0.33	15.49	sli	100	100	STR		
115.21	116.43	1.22	0.98	80.3278	0.13	10.66	sli	50	50	STR		
116.43	117.96	1.53	1.44	94.1177	0.3	19.61	sli	30	30	STR		
117.96	119.79	1.83	0.63	34.4262	0	0	sli	65	65	STR		
119.79	121.31	1.52	1.43	94.0792	0.11	7.24	sli	70	70	STR		
121.31	123.14	1.83	1.38	75.4098	0.46	25.14	sli	40	40	STR		
123.14	124.36	1.22	0.91	74.5901	0.11	9.02	mode	100	100	STR		
124.36	125.27	0.91	0.31	34.0661	0	0	mode	55	55	STR		
125.27	126.19	0.92	0.45	48.9127	0.14	15.22	mode	100	100	STR		
126.19	128.32	2.13	0.35	16.4319	0	0	mode	50	50	STR		
128.32	130.15	1.83	1.23	67.2136	0.1	5.46	sli	100	100	STR		

Hole ID: **ORO13-07**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
130.15	130.45	0.3	0.33	109.999	0	0	sli	55	55	STR		
130.45	132.59	2.14	1.47	68.6916	0.32	14.95	sli	100	100	STR		
132.59	133.5	0.91	0.8	87.9117	0	0	sli	25	25	STR		
133.5	134.42	0.92	0.58	63.0436	0	0	sli	100	100	STR		
134.42	135.33	0.91	0.57	62.6371	0	0	mode	100	100	STR		
135.33	136.25	0.92	0.66	71.7393	0	0	sof	100	100	STR		
136.25	136.55	0.3	0.34	113.332	0	0	mode	65	65	STR		
136.55	139.29	2.74	1.99	72.628	0.39	14.23	sli	100	100	STR		
139.29	142.34	3.05	2.51	82.295	1.22	40	sli	38	38	STR		
142.34	144.47	2.13	1.9	89.2017	0.74	34.74	sli	65	65	STR		
144.47	145.69	1.22	1.16	95.0819	0.43	35.25	sli	30	30	STR		
145.69	147.52	1.83	1.41	77.0491	0.45	24.59	sli	60	60	STR		
147.52	148.74	1.22	1.03	84.4261	0.1	8.2	sli	70	70	STR		
148.74	151.18	2.44	1.8	73.7709	0.37	15.16	sli	100	100	STR		
151.18	153	1.82	0.79	43.4064	0	0	mode	100	100	STR		
153	154.38	1.38	0.29	21.0144	0	0	mode	100	100	STR		
154.38	157.27	2.89	1.59	55.0173	0.23	7.96	sli	100	100	STR		
157.27	157.88	0.61	0.44	72.1311	0.14	22.95	mode	40	40	STR		
157.88	160.02	2.14	1.71	79.9066	0.22	10.28	sli	100	100	STR		
160.02	163.06	3.04	2.74	90.1318	0.65	21.38	sli	100	100	STR		
163.06	166.11	3.05	2.87	94.0983	1.9	62.3	sli	32	32	STR		
166.11	167.34	1.23	1.17	95.1223	0.56	45.53	sli	17	17	STR		
167.34	170.08	2.74	1.98	72.2626	1.03	37.59	sli	25	25	STR		
170.08	172.82	2.74	2.69	98.175	1.05	38.32	sli	34	34	STR		
172.82	174.65	1.83	1.9	103.826	0.47	25.68	mode	100	100	STR		
174.65	176.17	1.52	0.96	63.1577	0.17	11.18	mode	100	100	STR		
176.17	178.31	2.14	1.81	84.5795	0	0	mode	100	100	STR		
178.31	180.44	2.13	0.81	38.0281	0	0	mode	100	100	STR		
180.44	181.66	1.22	0.43	35.2459	0	0	sli	100	100	STR		
181.66	182.88	1.22	1.3	106.557	0.51	41.8	sli	16	16	STR		
182.88	183.79	0.91	0.38	41.7588	0.1	10.99	sli	6	6	STR		
183.79	184.4	0.61	0.32	52.459	0.13	21.31	sli	12	12	STR		
184.4	185.01	0.61	0.61	99.9999	0	0	sli	39	39	STR		
185.01	186.57	1.56	1.37	87.8198	0	0	sli	100	100	STR		
186.57	187.76	1.19	1.2	100.841	0.12	10.08	sli	58	58	STR		
187.76	188.98	1.22	0.85	69.6721	0.1	8.2	sli	65	65	STR		
188.98	191.41	2.43	2.1	86.4195	0.36	14.81	sli	100	100	STR		
191.41	192.33	0.92	0.92	100.000	0	0	sli	39	39	STR		
192.33	193.85	1.52	1.52	99.9997	0.42	27.63	sli	82	82	STR		

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Hole ID: **ORO13-07**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
193.85	195.07	1.22	0.98	80.3278	0.1	8.2	sli	26	26	STR		
195.07	196.29	1.22	1.23	100.821	0.22	18.03	sli	63	63	STR		
196.29	199.34	3.05	2.72	89.1802	1.45	47.54	sli	47	47	STR		
199.34	199.95	0.61	0.56	91.8032	0	0	sli	40	40	STR		
199.95	200.56	0.61	0.59	96.7212	0	0	sli	52	52	STR		
200.56	201.17	0.61	0.4	65.5737	0	0	mode	49	49	STR		
201.17	202.69	1.52	1.12	73.684	0.13	8.55	sli	83	83	STR		
202.69	203.61	0.92	0.7	76.0871	0	0	sli	31	31	STR		
203.61	204.83	1.22	0.51	41.8032	0.11	9.02	sli	44	44	STR		
204.83	206.65	1.82	1.8	98.9015	0	0	sli	100	100	STR		
206.65	209.7	3.05	2.49	81.6393	1.2	39.34	sli	57	57	STR		
209.7	212.75	3.05	2.94	96.3934	1.03	33.77	sli	100	100	STR		
212.75	215.79	3.04	1.72	56.5791	0.21	6.91	sli	72	72	STR		
215.79	217.62	1.83	1.44	78.6885	0.25	13.66	sli	100	100	STR		
217.62	219.76	2.14	1.34	62.6168	0.1	4.67	sli	100	100	STR		
219.76	221.28	1.52	1.2	78.9472	0	0	sli	39	39	STR		
221.28	223.72	2.44	2.13	87.295	0.3	12.3	sli	100	100	STR		
223.72	224.94	1.22	1	81.9671	0.12	9.84	sli	100	100	STR		
224.94	226.46	1.52	1.49	98.0261	0.11	7.24	sli	100	100	STR		
226.46	228.29	1.83	1.34	73.2246	0.13	7.1	sli	100	100	STR		
228.29	231.03	2.74	2.33	85.0363	0	0	mode	100	100	STR		
231.03	232.25	1.22	1.21	99.1802	0.18	14.75	mode	100	100	STR		
232.25	234.08	1.83	1.38	75.4098	0.3	16.39	mode	100	100	STR		
234.08	236.22	2.14	1.27	59.3458	0	0	mode	100	100	STR		
236.22	237.13	0.91	0.63	69.2305	0	0	mode	100	100	STR		
237.13	239.27	2.14	2.06	96.2617	0	0	mode	100	100	STR		
239.27	241.4	2.13	1.85	86.8549	0.1	4.69	mode	100	100	STR		
241.4	242.31	0.91	0.51	56.0437	0	0	mode	100	100	STR		
242.31	243.54	1.23	0.7	56.9108	0	0	mode	100	100	VWK		
243.54	244.75	1.21	0.84	69.4211	0	0	sof	100	100	SFT		
244.75	245.97	1.22	1.04	85.2458	0	0	mode	100	100	VWK		
245.97	246.58	0.61	0.09	14.7541	0	0	mode	45	45	STR		
246.58	249.33	2.75	2.46	89.4546	1.51	54.91	sli	100	100	STR		
249.33	252.37	3.04	2.58	84.8686	0.12	3.95	sli	100	100	STR		
252.37	254.51	2.14	1.71	79.9066	0.38	17.76	mode	100	100	STR		
254.51	256.03	1.52	1.27	83.5524	0.12	7.89	sli	100	100	STR		
256.03	258.47	2.44	2.02	82.7868	0.62	25.41	sli	85	85	STR		
258.47	261.52	3.05	2.99	98.0332	1.92	62.95	sli	29	29	STR		
261.52	262.43	0.91	0.66	72.5272	0.2	21.98	sli	30	30	STR		

GeoSpark Logger Print Logs ~ Geotechnical

Hole ID: **ORO13-07**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
262.43	264.57	2.14	1.8	84.1116	0.88	41.12	sli	72	72	STR		
264.57	266.7	2.13	1.83	85.9153	0.5	23.47	sli	75	75	STR		
266.7	269.75	3.05	2.84	93.1151	0.67	21.97	sli	80	80	STR		
269.75	270.97	1.22	1.1	90.1638	0.33	27.05	sli	55	55	STR		
270.97	272.19	1.22	0.96	78.6885	0.52	42.62	sli	40	40	STR		
272.19	272.49	0.3	0.35	116.671	0.15	50	sli	11	11	STR		EOH

DataSet: ORO_GF

Hole ID: ORO13-07

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
25.91	28	2.09	0.035	0.042	0.032	0.036				
28	30	2	0.035	0.128	0.019	0.061				
30	32	2	0.045	0.029	0.037	0.037				
32	34	2	0.027	0.135	0.01	0.057				
34	36	2	0.002	0.021	0.247	0.09				
36	38	2	0.209	0.216	0.242	0.222				
38	40	2	0.05	0.303	0.158	0.17				
40	42	2	0.152	0.06	0.015	0.076				
42	44	2	0.024	0.29	0.028	0.114				
44	46	2	0.17	0.03	0.064	0.088				
46	48	2	0.221	0.009	0.005	0.078				
48	49.37	1.37	0.032	0.112	0.07	0.071				
49.37	51	1.63	0	-0.009	0.002	-0.002				
51	53	2	-0.003	0.027	0.014	0.013				
53	55	2	0.03	-0.007	0	0.008				
55	57	2	0.081	0.003	-0.005	0.026				
57	58.91	1.91	0.142	0.108	0.015	0.088				
58.91	61	2.09	0.021	0.117	0.035	0.058				
61	63	2	0.076	0.047	0.431	0.185				
63	65.16	2.16	0.028	0.476	0.24	0.248				
65.16	67	1.84	0.263	0.062	0.018	0.114				
67	68.28	1.28	0.265	0.18	0.301	0.249				
68.28	69.71	1.43	0.027	0.026	0.054	0.036				
69.71	71	1.29	0.216	0.151	0.047	0.138				
71	72.35	1.35	0.028	0.082	0.009	0.04				
72.35	73.5	1.15	0.108	0.23	0.109	0.149				
73.5	75	1.5	0.009	0.071	0.045	0.042				
75	77.11	2.11	0.02	0.023	0.131	0.058				
77.11	78.63	1.52	0.141	0.002	0.058	0.067				
78.63	81	2.37	1.01	0.274	0.046	0.443				
81	81.68	0.68	0.211	0.156	0.185	0.184				
81.68	83	1.32	0.104	0.131	0.686	0.307				
83	85	2	0.011	0.009	0.004	0.008				
85	87	2	0.031	0.022	0.038	0.03				
87	89	2	0.06	0.003	0.05	0.038				
89	91	2	-0.236	0.302	0.096	0.054				
91	93.72	2.72	0.088	0.104	0.079	0.09				

GOLD FIELDS

GeoSpark Logger Print Logs ~ Mag Susceptibility

Hole ID: **ORO13-07**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
93.72	96	2.28	0.047	0.185	0.059	0.097				
96	97.8	1.8	0.194	0.042	0.032	0.089				
97.8	100	2.2	0.027	0.122	0.012	0.054				
100	102	2	0.026	0.007	0.653	0.229				
102	103.03	1.03	0.172	0	-0.001	0.057				
103.03	105	1.97	0.008	0.043	0.723	0.258				
105	107	2	0.062	0.049	0.651	0.254				
107	109	2	0.027	0.491	0.182	0.233				
109	111	2	0.047	0.065	0.148	0.087				
111	113	2	0.025	0.188	0.07	0.094				
113	114	1	-0.004	0.172	0.035	0.068				
114	116.43	2.43	0.073	-0.004	0.066	0.045				
116.43	118	1.57	0.03	0.031	0.038	0.033				
118	120	2	0.004	0.002	0.076	0.027				
120	122	2	0.001	0.174	0.411	0.195				
122	124	2	0.005	0.015	0.07	0.03				
124	126	2	0.063	0.08	0.056	0.066				
126	129.31	3.31	0.039	0.255	0.149	0.148				
129.31	131	1.69	0.121	0.279	0.006	0.135				
131	133	2	0.021	0.032	0.262	0.105				
133	135	2	0.005	0.014	0.129	0.049				
135	137	2	0.027	0.022	0.01	0.02				
137	139	2	0.036	0.046	0.014	0.032				
139	141	2	0	0.222	-0.859	-0.212				
141	143	2	0.219	0.383	0.027	0.21				
143	145	2	0.047	0.005	0.325	0.126				
145	147	2	0.628	0.142	0.543	0.438				
147	149.07	2.07	0.051	0.067	0.014	0.044				
149.07	150.6	1.53	0.622	0.076	0.277	0.325				
150.6	152	1.4	0.058	0.143	0.001	0.067				
152	154.38	2.38	-0.006	-0.007	0.221	0.069				
154.38	156	1.62	0.033	0.226	0.311	0.19				
156	157.05	1.05	0.035	0.041	0.051	0.042				
157.05	159	1.95	0.025	0.194	-0.005	0.071				
159	161	2	-0.004	0.052	0.261	0.103				
161	163	2	0.036	0.466	0.937	0.48				
163	164.34	1.34	0.013	0.213	0.001	0.076				
164.34	166	1.66	0.033	0.694	0.059	0.262				
166	167.7	1.7	0.032	0.539	0.59	0.387				

GeoSpark Logger Print Logs ~ Mag Susceptibility

Hole ID: **ORO13-07**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
167.7	170	2.3	0.01	0.688	0.113	0.27				
170	172	2	0.169	0.475	0.041	0.228				
172	174	2	0.044	0.292	0.201	0.179				
174	176	2	0.286	0.326	1.04	0.551				
176	177	1	0.174	0.26	0.374	0.269				
177	179.94	2.94	0.05	0.026	0.557	0.211				
179.94	182	2.06	0.193	0.285	0.165	0.214				
182	184.4	2.4	0.12	0.209	0.063	0.131				
184.4	186	1.6	0.046	0.122	0.569	0.246				
186	188	2	0.443	0.034	0.311	0.263				
188	190.27	2.27	0.016	0.058	0.058	0.044				
190.27	192.2	1.93	0.093	0.722	0.126	0.314				
192.2	194	1.8	0.019	0.052	0.072	0.048				
194	196	2	0.082	0.035	0.039	0.052				
196	198	2	0.041	0.042	0.042	0.042				
198	200	2	0.573	0.15	0.07	0.264				
200	202	2	0.038	0.015	0.087	0.047				
202	203	1	0.24	0.04	0.155	0.145				
203	204.83	1.83	0.629	0.339	0.03	0.333				
204.83	207	2.17	0.021	0.442	0	0.154				
207	209	2	0.214	0.023	0.022	0.086				
209	210.8	1.8	0.031	0.034	0.022	0.029				
210.8	213	2.2	1.11	1.65	1.12	1.293				
213	215.79	2.79	0.029	0.064	0.378	0.157				
215.79	217	1.21	0.038	0.01	0.051	0.033				
217	219	2	0.294	0.046	0.054	0.131				
219	221	2	0.794	0.231	0.19	0.405				
221	223	2	0.186	0.164	0.138	0.163				
223	225	2	0.066	0.166	0.3	0.177				
225	227.3	2.3	0.087	0.122	1.7	0.636				
227.3	230	2.7	0.199	0.137	0.166	0.167				
230	232	2	0.129	0.275	0.19	0.198				
232	234	2	0.318	0.213	0.736	0.422				
234	236	2	0.139	0.052	0.19	0.127				
236	238	2	0.13	1.41	0.195	0.578				
238	240	2	0.082	0.322	0.231	0.212				
240	241.24	1.24	0.153	0.16	0.128	0.147				
241.24	243	1.76	0.29	0.036	0.082	0.136				
243	245	2	0.133	0.195	0.021	0.116				

GeoSpark Logger Print Logs ~ Mag Susceptibility

Hole ID: **ORO13-07**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
245	246.96	1.96	0.116	0.076	0.192	0.128				
246.96	249	2.04	0.23	0.146	0.039	0.138				
249	251	2	0.098	0.075	0.064	0.079				
251	253	2	0.072	0.804	0.684	0.52				
253	255	2	0.131	0.124	0.072	0.109				
255	256.76	1.76	0.366	0.183	0.267	0.272				
256.76	259	2.24	0.2	0.073	0.065	0.113				
259	261	2	0.051	0.392	0.437	0.293				
261	263	2	0.227	0.21	0.478	0.305				
263	264	1	0.152	0.298	0.428	0.293				
264	266	2	0.059	0.127	0.047	0.078				
266	268	2	0.571	0.173	0.367	0.37				
268	269	1	0.673	0.276	0.193	0.381				
269	270.73	1.73	0.158	0.178	0.085	0.14				
270.73	272.49	1.76	0.03	0.062	0.028	0.04				EOH

GeoSpark Logger Print Logs ~ DH Samples

DataSet: ORO_GF

Hole ID: ORO13-07

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
25.91	28	Q186615	HC	RC	☐	
28	30	Q186616	HC	RC	☐	
30	32	Q186617	HC	RC	☑	
32	34	Q186619	HC	RC	☐	
34	36	Q186621	HC	RC	☑	
36	38	Q186622	HC	RC	☐	
38	40	Q186623	HC	RC	☑	
40	42	Q186624	HC	RC	☐	
42	44	Q186625	HC	RC	☐	
44	46	Q186626	HC	RC	☐	
46	48	Q186627	HC	RC	☐	
48	49.37	Q186628	HC	RC	☐	
49.37	51	Q186629	HC	RC	☐	
51	53	Q186631	HC	RC	☐	
53	55	Q186632	HC	RC	☐	
55	57	Q186633	HC	RC	☐	
57	58.91	Q186634	HC	RC	☐	
58.91	61	Q186635	HC	RC	☐	
61	63	Q186636	HC	RC	☐	
63	65.16	Q186637	HC	RC	☐	
65.16	67	Q186638	HC	RC	☐	
67	68.28	Q186639	HC	RC	☐	
68.28	69.71	Q186641	HC	RC	☐	
69.71	71	Q186642	HC	RC	☐	
71	72.35	Q186643	HC	RC	☑	
72.35	73.5	Q186644	HC	RC	☑	
73.5	75	Q186646	HC	RC	☐	
75	77.11	Q186647	HC	RC	☐	
77.11	78.63	Q186648	HC	RC	☐	
78.63	81	Q186649	HC	RC	☐	
81	81.68	Q186651	HC	RC	☐	
81.68	83	Q186652	HC	RC	☐	
83	85	Q186653	HC	RC	☐	
85	87	Q186654	HC	RC	☐	
87	89	Q186655	HC	RC	☐	
89	91	Q186656	HC	RC	☐	
91	93.72	Q186657	HC	RC	☐	

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-07**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
93.72	96	Q186658	HC	Svan	☐	
96	97.8	Q186659	HC	Svan	☐	
97.8	100	Q186661	HC	Svan	☐	
100	102	Q186662	HC	Svan	☐	
102	103.03	Q186663	HC	Svan	☑	
103.03	105	Q186664	HC	Svan	☐	
105	107	Q186665	HC	Svan	☐	
107	109	Q186666	HC	Svan	☐	
109	111	Q186667	HC	Svan	☐	
111	113	Q186668	HC	Svan	☑	
113	114	Q186669	HC	Svan	☐	
114	116.43	Q186671	HC	Svan	☑	
116.43	118	Q186673	HC	Svan	☐	
118	120	Q186674	HC	Svan	☐	
120	122	Q186675	HC	Svan	☐	
122	124	Q186676	HC	Svan	☐	
124	126	Q186677	HC	Svan	☐	
126	129.31	Q186678	HC	Svan	☑	
129.31	131	Q186679	HC	Svan	☐	
131	133	Q186681	HC	Svan	☐	
133	135	Q186682	HC	Svan	☐	
135	137	Q186683	HC	Svan	☐	
137	139	Q186684	HC	Svan	☐	
139	141	Q186685	HC	Svan	☐	
141	143	Q186686	HC	Svan	☐	
143	145	Q186687	HC	Svan	☐	
145	147	Q186688	HC	Svan	☐	
147	149.07	Q186689	HC	Svan	☐	
149.07	150.6	Q186691	HC	Svan	☐	
150.6	152	Q186692	HC	Svan	☐	
152	154.38	Q186693	HC	Svan	☐	
154.38	156	Q186694	HC	Svan	☐	
156	157.05	Q186695	HC	Svan	☐	
157.05	159	Q186696	HC	Svan	☐	
159	161	Q186697	HC	Svan	☐	
161	163	Q186698	HC	Svan	☑	
163	164.34	Q186701	HC	Svan	☐	
164.34	166	Q186702	HC	Svan	☐	
166	167.7	Q186703	HC	Svan	☐	

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-07**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
167.7	170	Q186704	HC	Svan	☐	
170	172	Q186705	HC	Svan	☐	
172	174	Q186706	HC	Svan	☐	
174	176	Q186707	HC	Svan	☐	
176	177	Q186708	HC	Svan	☐	
177	179.94	Q186709	HC	Svan	☐	
179.94	182	Q186711	HC	Svan	☐	
182	184.4	Q186712	HC	Svan	☑	
184.4	186	Q186713	HC	Svan	☐	
186	188	Q186714	HC	Svan	☐	
188	190.27	Q186715	HC	Svan	☐	
190.27	192.2	Q186716	HC	Svan	☐	
192.2	194	Q186717	HC	Svan	☐	
194	196	Q186718	HC	Svan	☐	
196	198	Q186719	HC	Svan	☐	
198	200	Q186721	HC	Svan	☑	
200	202	Q186722	HC	Svan	☐	
202	203	Q186723	HC	Svan	☐	
203	204.83	Q186724	HC	Svan	☐	
204.83	207	Q186725	HC	Svan	☐	
207	209	Q186726	HC	Svan	☑	
209	210.8	Q186728	HC	Svan	☐	
210.8	213	Q186729	HC	Svan	☐	
213	215.79	Q186731	HC	Svan	☐	
215.79	217	Q186732	HC	Svan	☐	
217	219	Q186733	HC	Svan	☐	
219	221	Q186734	HC	Svan	☐	
221	223	Q186735	HC	Svan	☐	
223	225	Q186736	HC	Svan	☐	
225	227.3	Q186737	HC	Svan	☐	
227.3	230	Q186738	HC	Svan	☐	
230	232	Q186739	HC	Svan	☐	
232	234	Q186741	HC	Svan	☐	
234	236	Q186742	HC	Svan	☐	
236	238	Q186743	HC	Svan	☑	
238	240	Q186744	HC	Svan	☐	
240	241.24	Q186745	HC	Svan	☐	
241.24	243	Q186746	HC	Svan	☐	
243	245	Q186747	HC	Svan	☐	

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-07**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
245	246.96	Q186748	HC	Svan	☐	
246.96	249	Q186749	HC	Svan	☐	
249	251	Q186751	HC	Svan	☐	
251	253	Q186752	HC	Svan	☐	
253	255	Q186753	HC	Svan	☐	
255	256.76	Q186754	HC	Svan	☑	
256.76	259	Q186756	HC	Svan	☐	
259	261	Q186757	HC	Svan	☐	
261	263	Q186758	HC	Svan	☐	
263	264	Q186759	HC	Svan	☐	
264	266	Q186761	HC	Svan	☐	
266	268	Q186762	HC	Svan	☐	
268	269	Q186763	HC	Svan	☐	
269	270.73	Q186764	HC	Svan	☐	
270.73	272.49	Q186765	HC	Svan	☐	EOH

GeoSpark Logger Print Logs ~ Duplicate Samples

DataSet: ORO_GF

Hole ID: ORO13-07

From (m)	To (m)	Sample ID	Original Sample ID	QC Category	Comments
30	32	Q186618	Q186617	FD	
34	36	Ch:Q186621	Q186621	LABCHCK	
38	40	Ch:Q186623	Q186623	LABCHCK	
71	72.35	Ch:Q186643	Q186643	LABCHCK	
72.35	73.5	Q186645	Q186644	FD	
102	103.03	Ch:Q186663	Q186663	LABCHCK	
111	113	Pd:Q186668	Q186668	PREPCHK	
114	116.43	Q186672	Q186671	FD	
126	129.31	Ch:Q186678	Q186678	LABCHCK	
161	163	Q186699	Q186698	FD	
182	184.4	Ch:Q186712	Q186712	LABCHCK	
198	200	Pd:Q186721	Q186721	PREPCHK	
207	209	Q186727	Q186726	FD	
236	238	Ch:Q186743	Q186743	LABCHCK	
255	256.76	Q186755	Q186754	FD	

GOLD FIELDS

GeoSpark Logger Print Logs ~ Standards / Blanks

DataSet: **ORO_GF**

Hole ID: **ORO13-07**

Sample ID	Standard ID	Comments
Q186620	CDN-CM-25	
Q186630	FB	
Q186640	CDN-GS-5L	
Q186650	FB	
Q186660	CDN-CM-25	
Q186670	FB	
Q186680	CDN-GS-5L	
Q186690	FB	
Q186700	CDN-CM-25	
Q186710	FB	
Q186720	CDN-GS-5L	
Q186730	FB	
Q186740	CDN-CM-25	
Q186750	FB	
Q186760	CDN-GS-5L	

Gold Fields Selwyn – Quicklog, ORO13-08

<table>
<tr><td>Hole no: ORO13-08
Logged By: SVan/TCS</td><td>Az: 200°</td><td>Dip: -65°</td><td>Target depth:
250 m</td><td colspan="2">EOH: 260.30 m</td></tr>
<tr><td>Start date:
August 15, 2013</td><td>End date:
August 18, 2013</td><td>Pad:
ORO13-R</td><td>E:
401963</td><td>N:
7019452</td><td>Elevation:
1645 m</td></tr>
<tr><td colspan="3">Target:
ORO13-08 targets permissive lithologies; variably decalcified limestone of the Sapper Formation and the potential contact with silver grey shale/argillite and cherty/siliceous argillite's which are intruded by a quartz-feldspar-phyric dyke.</td><td colspan="3">Target explained?
Targeted 'Sapper Limestone', which assumes a buff weathered appearance at surface, occurs as thinly bedded or laminated to massive black calcareous mudstone at depth. It does not appear that significant mineralisation was intersected in this hole.</td></tr>
<tr><td colspan="6">Summary:
Location: Is located approximately 1 km southeast of the Main zone and 1 km to the East of ORO13-01.
Lithology: Overburden extends to 4.57 m, followed by sulphide-bearing graphitic black shale to 71.83 m. This unit is cut by a quartz and feldspar – phyric dyke between 37.85 and 45.11 m. Thinly bedded calcareous shale occurs between 71.83 and 74.67m, followed by graphitic shale to 101.5 m. A 2m fault zone marks the upper contact of thinly bedded to massive calcareous mudstone/shale that extends to EOH at 260.3 m.
Alteration: Strong fracture controlled FeOx alteration occurs from top of hole to ~22m, and may be associated with minor scorodite. Clay alteration occurs in fracture/fault zones, and is pervasive throughout the felsic dyke logged between 37.85 and 45.11 m.
Mineralization: Pyrite is weakly disseminated throughout the graphitic shale, and is most abundant between 19.51 and 35.30 m, where it occurs in lenses up to 30 mm thick.
Interpretation/Comments: Targeted 'Sapper Limestone', which assumes a buff weathered appearance at surface, occurs as thinly bedded or laminated to massive black calcareous mudstone at depth. It does not appear that significant mineralisation was intersected in this hole.</td></tr>
</table>

Shift	From	To	Comments
Aug 15 - 16, 2013. 0 – 114 m.	**0**	**4.57**	**Overburden**
	4.57	**16.1**	**Shale (ShU)** Thinly bedded (~ 60°tca) to massive friable black shale. Abundant FeOx± possible scorodite on fracture planes. Weakly disseminated pyrite occurs locally. **Py ~0.25%**
	16.1	**19.51**	**Faulted shale** Black shale rubble and gouge. Strongly clay and FeOx altered. Common chunks of quartz – veins within rubble.
	19.51	**35.30**	**Sulphidic shale (ShU)** Thinly bedded (~60°tca) sulphidic black shale. Common pyrite lenses up to 30 mm. Fracture controlled Feox ± scorodite alteration extends down-hole ~2 m from upper faulted contact. Rare zeolite±pyrite veins. Minor talc on fracture surfaces. **Py~10%**

	35.30	**37.85**	**Graphitic shale (ShU)** Black carbonaceous shale. Polished graphite coats surfaces. Common minor faulting; tectonic fabric throughout ~50°. Rare zeolite± quartz veins <2mm. Pyrite decreases but still occurs as fine grained dissemination and local aggregates. **Py ~ 1%**
	37.85	**45.11**	**Quartz and feldspar - phyric dyke (QpFd)** Grey- whitish quartz and feldspar phyric dyke. Textures muted by moderate clay alteration. Visible phenocrysts include subhedral feldspar (~20%, <3mm, and subhedral quartz 'eyes' (~5%, <3mm). Possible relict hornblende (~20%, <1mm) may be replaced by pyrite. Medium- grained disseminated pyrite common throughout. Sharp intrusive pyrite- rimmed upper contact (25°tca), chilled banded lower contact ~40°tca. **Py ~3%**
	45.11	**71.83**	**Graphitic black shale (ShU)** Black carbonaceous shale. Polished graphite coats surfaces. Common minor faulting; tectonic fabric 20 - 50° tca extends to ~63.50m. Common discontinuous vuggy quartz + bladed greenish mineral (barite±gypsum?) veins, <4cm, 15 – 60°tca. Green-brownish mineral forms blades orthogonal to each other at ~30° and 150°, is crumbly, has a whitish streak and hardness of ~5. Common pyrite lenses <10mm, weakly disseminated pyrite throughout. **Py ~ 2%**
	71.83	**74.67**	**Calcareous shale (MdstCal)** Thinly bedded calcareous shale. Strong reaction to HCl. Bedding ~ 70° tca, discontinuous and broken by minor faulting/loading. Common calcite veins, typically <2mm and parallel to bedding but also occur along shear structures ~20° tca. Local barite±quartz veins.
	74.67	**101.5**	**Graphitic black shale (ShU)** Black carbonaceous shale. Polished graphite coats surfaces. Common minor faulting; tectonic fabric 20 - 50° tca extends to ~63.50m. Common discontinuous vuggy quartz + bladed greenish mineral (barite±gypsum?) veins, <4cm, 15 – 60°tca. Green-brownish mineral forms blades orthogonal to each other at ~30° and 150°, is crumbly, has a whitish streak and hardness of ~5. Weakly disseminated pyrite along bedding planes. **Py~0.5%**
	101.5	**103.02**	**Faulted shale** Very poor recovery. ~ 1.2m core loss. Shale gouge and gravelly rubble.
	103.02	**150**	**Calcareous black shale (MdstCal)** Massive- to thinly bedded black calcareous mudstone. Weak to moderate reaction to Hcl. Calcite veins <3mm, ~60° tca, 10/m are offset locally by fractures, but may maintain connectivity between

			fracture planes. No visible sulphides.
Aug 17-18/2013 114.62 – 260.3	**150**	**179.22**	**Faulted Calcareous black shale (MdstCal, Flt)** Black angular calcareous mudstone rubble and abundant fault gouge. Significant core loss, up to ~2 m sections washed away. Where visible, graphitic shear planes are oriented ~ 30°tca. No visible sulphides.
	179.22	**184**	**Calcareous black shale (MdstCal)** Massive- to thinly bedded black calcareous mudstone. Weak to moderate reaction to Hcl. Calcite veins <3mm, ~60° tca, 10/m are offset locally by fractures, but may maintain connectivity between fracture planes which are oriented ~ 30° tca. No visible sulphides.
	184	**187.15**	**Faulted Calcareous black shale (MdstCal, Flt)** Black angular calcareous mudstone rubble and abundant fault gouge. Shearing oriented~ 20 – 40° tca. No visible sulphides.
	187.15	**195.6**	**Calcareous black shale (MdstCal)** Massive- to thinly bedded black calcareous mudstone. Weak to moderate reaction to Hcl. Calcite veins <3mm, ~60° tca, 10/m are offset locally by fractures, but may maintain connectivity between fracture planes. No visible sulphides.
	195.6	**197.7**	**Faulted Calcareous black shale (MdstCal, Flt)** Black angular calcareous mudstone rubble and abundant fault gouge. Undulating shear fabric/planes oriented ~ 0 – 20° tca. No visible sulphides.
	197.7	**260.3**	**Calcareous black shale (MdstCal)** Massive- to thinly bedded black calcareous mudstone. Weak to moderate reaction to Hcl. Calcite veins <3mm, ~60° tca, 10/m are offset locally by fractures, but maintain connectivity between fracture planes. Common minor fault gouge associated with rubble zones. No visible sulphides.

GeoSpark Logger Print Logs ~ Collars

DataSet: **ORO_GF**

Depth (m)	Hole Type	Core Diamete	Grid ID	East	North	Elevation	Survey Method	Survey Date	Survey By	Date Started	Date Completed	Logged By	Prospect	Validated By
Hole: ORO13-08														
260.3 m	DD	HQ/NQ	UTM09N_NAD83	401963	7019452	1645	GPS	08/08/2013	RC	15/08/2013	18/08/2013	TimS	Main Zone	

GeoSpark Logger Print Logs ~ DH Surveys

DataSet: ORO_GF

Hole ID: ORO13-08

Depth (m)	Survey Method	Grid ID	Dip	Surv. Tool Azimuth	Magnetic Declination	Corrected Azimuth	Magnetics	Date Surveyed	Survey Instrument	Bad Reading	Comments
0	COLL	UTM09N_NAD83	-65	200	0	200		20/08/2013	CMP	☐	
7.62	EZ Shot	UTM09N_NAD83	-64.3	180	22.5	202.5		20/08/2013	EZ	☐	
66.14	EZ Shot	UTM09N_NAD83	-64.5	177.5	22.5	200		20/08/2013	EZ	☐	
130.76	EZ Shot	UTM09N_NAD83	-63.2	183.1	22.5	205.6		20/08/2013	EZ	☐	
203.91	EZ Shot	UTM09N_NAD83	-63.8	180.9	22.5	203.4		20/08/2013	EZ	☐	
251.46	EZ Shot	UTM09N_NAD83	-63.2	181.5	22.5	204		17/08/2013	EZ	☐	

DataSet: ORO_GF

Hole ID: ORO13-08

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	0	4.57	Overburden	Overburden (OB)	

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	4.57	16.1	Black Shale	undifferentiated shale	Thinly bedded (~ 60°tca) to massive friable black shale. Abundant FeOx± possible scorodite on fracture planes. Weakly disseminated pyrite occurs locally. Py ~0.25%

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	4.57	7.01	RUB	S	
	11	11.01	BED		60
	11.01	11.02	FOL		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	16.1	19.51	Fault Gouge	Fault gouge (UTG)	Black shale rubble and gouge. Strongly clay and FeOx altered. Common chunks of quartz – veins within rubble.

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Signed: ______________

DataSet: ORO_GF

Hole ID: ORO13-08

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
4.57	19.51	Py	0.25	DIS										trace disseminated pyrite

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
4.57	19.51	VQtz	±hem	0.1										Rare vuggy to bladed quartz +- hematite veins. Fault gouge section contains chunks of vein quartz.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
16.1	17.1	FLTG	VS	
17.1	18.2	RUB	S	
18.2	19.51	FLTG	VS	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	19.51	35.3	Black Shale	undifferentiated shale	Thinly bedded (~60°tca) sulphidic black shale. Common pyrite lenses up to 30 mm. Fracture controlled Feox ± scorodite alteration extends down-hole ~2 m from upper faulted contact. Rare zeolite±pyrite veins. Minor talc on fracture surfaces. Py~10%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
19.51	35.3	Py	10	NOD										Common pyrite lenses up to 30 mm. Fracture controlled Feox ± scorodite alteration extends down-hole ~2 m from upper faulted contact. Rare zeolite±pyrite veins

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
19.51	22.5	RUB	VS	
24.4	24.5	FLTG	S	
27.6	27.75			
29.5	29.87	RUB		
35	35.01	BED		60

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	35.3	37.85	Black Shale	undifferentiated shale	Black carbonaceous shale. Polished graphite coats surfaces. Common minor faulting; tectonic fabric throughout ~50°. Rare zeolite± quartz veins <2mm. Pyrite decreases but still occurs as fine grained dissemination and local aggregates. Py ~ 1%

DataSet: ORO_GF

Hole ID: ORO13-08

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	35.3	37.85	Py	1	DIS										Pyrite decreases but still occurs as fine grained dissemination and local aggregates. Py ~ 1%

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	19.51	37.85	VQtz	n/a	0.2										Rare quartz+-zeolite veins. Zeolite is bladed/fibrous perpendicular to vein walls.

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	35.3	37.8	FLTBX	S	50

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	37.85	45.11	Felsic Dyke	Quartz and plag-phyric felsic dykes (FDyk)	Gy-whtish qtz+fspar phyric dyke. Mod clay+ser alt. Pheno's include subh fspar ~20%, <3mm, subhedral quartz ~5%, <3mm, and relict hbl ~20%, <1mm. Mg dis Py th/out, may replace mafics. Sharp intr Py-rimmed upper cont ~25°tca, chilled banded lower cont ~40°.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	37.85	45.11	Py	3	DIS										Possible relict hornblende (~20%, <1mm) may be replaced by pyrite. Medium- grained disseminated pyrite common throughout. Sharp intrusive pyrite- rimmed upper contact (25°tca),

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	37.85	45.11	VQtz	n/a	0.25										single quartz vein ~41.25m

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	38.13	39.31	FLT	S	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	45.11	71.83	Black Shale	undifferentiated shale	Black carbonaceous shale. Polished graphite coats surfaces. Common minor faulting; tectonic fabric 20 - 50° tca extends to ~63.50m. Common discontinuous vuggy quartz + bladed greenish min veins, <4cm, 15 – 60°tca. Common pyrite lenses <10mm.

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Signed: ______________

DataSet: **ORO_GF**

Hole ID: **ORO13-08**

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
45.11	71.83	Py	2	DIS										Common pyrite lenses <10mm, weakly disseminated pyrite throughout. Py ~ 2%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
45.11	71.83	Vbar	±qtz	2										Common discontinuous vuggy quartz + bladed brown -greenish mineral veins, <4cm, 15 – 60°tca. Green-brownish mineral forms blades orthogonal to each other at ~30° and 150° is crumbly and has a whitish streak and hardness of ~5-6.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
45.11	63.4	FLTBX	M	50
69.7	69.71	FLT		40

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	71.83	74.67	Carbonate	Calcareous mudstone	Thin beds calc shale and sst ~70°tca. Minor flts/load struc. Comn Cal vns <2mm ~70°. Local barite±quartz veins.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
71.83	74.67	UnMin	0											

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
71.83	74.67	Vbar	±qtz	1	Vcal		5							Common calcite veins, typically <2mm and parallel to bedding but also occur along shear structures ~20° tca. Local barite±quartz veins.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
72	72.01	BED		70

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	74.67	101.5	Black Shale	undifferentiated shale	Black graphitic shale. Polished fracture planes. Comn minor flt w/ fabric 20-50°. Comn discont vuggy qtz+barite vns, <4cm, 15–60°tca. Wk diss py along bedding planes.

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Signed: ______________

DataSet: ORO_GF

Hole ID: ORO13-08

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
74.67	101.5	Py	0.5	DIS										Weakly disseminated pyrite along bedding planes. Py~0.5%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
74.67	101.5	Vbar	±qtz	3										Barite +- Quartzveins, <4mm, 15 – 60°tca. Green-brownish mineral forms blades orthogonal to each other at ~30° and 150°, is crumbly, has a whitish streak and hardness of ~5.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
78.94	100.1	RUB	S	40

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	101.5	103.02	Tectonic/Fault Rock - Undifferentiated	Fault (UT)	Faulted shale. Very poor recovery. ~ 1.2m core loss. Shale gouge and gravelly rubble.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
101.5	103.02	NoVeins	n/a											

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
100.5	103.02	FLT	S	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	103.02	150	Mudstone - Calcareous	Calcareous mudstone	Massive- to thinly bedded black calcareous mudstone. Weak to moderate reaction to Hcl. Calcite veins <3mm, ~60° tca, 10/m are offset locally by fractures, but may maintain connectivity between fracture planes. No visible sulphides.

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Signed: _______________

DataSet: ORO_GF

Hole ID: ORO13-08

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
103.02	150	Vcal	n/a	3										Calcite veins <3mm, ~60° tca, 10/m are offset locally by fractures, but may maintain connectivity between fracture planes.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
104.85	104.9	FLT	S	
108.7	108.71			40
111.82	111.85		S	60
129.95	129.96		M	15
134.2	134.72	RUB		
137	137.01	BED		20
140.8	143.56	RUB		25
144.3	144.5	FLT		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	150	179.22	Tectonic/Fault Rock - Undifferentiated	Fault (UT)	Black angular calcareous mudstone rubble and abundant fault gouge. Significant core loss, up to ~2 m sections washed away. Where visible, graphitic shear planes are oriented ~ 30°tca. No visible sulphides.

DataSet: ORO_GF

Hole ID: ORO13-08

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
150	179.22	Vcal	n/a											Broken discontinuous calcite vein chunks within fault gouge, thin calcite veins in rare inatct core pieces.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
150	157.28	RUB	S	
157.28	158.5	FLTG		
158.5	163.8	RUB		
163.8	164.24	FLTG		
164.24	170.38	RUB		
170.38	173.43	FLTG		15
173.8	174.1	FLT	M	20
175.26	175.27			10
177	179.22	FLTG	S	20

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	179.22	184	Mudstone - Calcareous	Calcareous mudstone	Massive- to thinly bedded black calcareous mudstone.Calcite veins <3mm, ~60° tca, 10/m are offset locally by fractures, but may maintain connectivity between fracture planes which are oriented ~ 30° tca. No sulphide visible

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
179.22	184	Vcal	n/a	5										Calcite veins <3mm, ~60° tca, 10/m are offset locally by fractures, but may maintain connectivity between fracture planes which are oriented ~ 30° tca.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	184	187.15	Tectonic/Fault Rock - Undifferentiated	Fault (UT)	Black angular calcareous mudstone rubble and abundant fault gouge. Shearing oriented~ 20 – 40° tca. No visible sulphides.

Gold Fields Canada

Signed: ______________

DataSet: ORO_GF

Hole ID: ORO13-08

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
184	187.15	Vcal	n/a											broken vein fragments amongst rubble and gouge

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
184	186.2	FLTG	S	20

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	187.15	195.6	Mudstone - Calcareous	Calcareous mudstone	Massive- to thinly bedded black calcareous mudstone.Calcite veins <3mm, ~60° tca, 10/m are offset locally by fractures, but may maintain connectivity between fracture planes which are oriented ~ 30° tca. No sulphide visible

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
187.15	195.6	Vcal	n/a	5										. Calcite veins <3mm, ~60° tca, 10/m are offset locally by fractures, but may maintain connectivity between fracture planes.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
187.15	187.5	FLTBX	M	
190.3	191.41	RUB	S	
191.92	192.94			
193	193.01	BED		20
194.8	195.6	RUB	S	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	195.6	197.7	Tectonic/Fault Rock - Undifferentiated	Fault (UT)	Black angular calcareous mudstone rubble and abundant fault gouge. Undulating shear fabric/planes oriented ~ 0 – 20° tca. No visible sulphides.

Gold Fields Canada **Signed:** ______________

DataSet: ORO_GF

Hole ID: ORO13-08

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
195.6	197.7	Vcal	n/a											broken fragments of calcite veins amongst rubble and gouge

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
195.6	197.7	FLTG	S	5

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	197.7	260.3	Mudstone - Calcareous	Calcareous mudstone	Massive- to thinly bedded black calcareous mudstone. Calcite veins <3mm, ~60° tca, 10/m are offset locally by fractures, but maintain connectivity between fracture planes. Common minor fault gouge associated with rubble zones. No visible sulphides.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
101.5	260.3	UnMin	0											No visible sulphides

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
197.7	260.3	Vcal	n/a											Calcite veins <3mm, ~60° tca, 10/m are offset locally by fractures, but maintain connectivity between fracture planes.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
201.7	201.78	FLTG	M	
208	208.01	FLT	W	35
221	222	RUB	S	
222	222.4	FLTG		
225.75	226	RUB		
236	239.73			
246.65	246.68	FLT	M	50
252	252.68	RUB	S	
256	256.7		M	
258.6	258.78		S	
260	260.3		M	

GeoSpark Logger Print Logs ~ Geotechnical

DataSet: ORO_GF

Hole ID: ORO13-08

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
4.57	5.49	0.92	0.4	43.4783	0	0	sli	45	45	STR		
5.49	7.01	1.52	0.9	59.2105	0	0	mode	100	100	STR		
7.01	8.53	1.52	1.3	85.5263	0	0	sli	70	70	STR		
8.53	10.16	1.63	1.46	89.5706	0.46	28.22	sli	25	25	STR		
10.16	10.39	0.23	0.23	99.9998	0	0	sli	7	7	STR		
10.39	11.89	1.5	1.4	93.3333	0.5	33.33	sli	30	30	STR		
11.89	13.41	1.52	1.25	82.2369	0.18	11.84	mode	35	35	STR		
13.41	14.63	1.22	1.14	93.4426	0	0	sli	100	100	STR		
14.63	15.85	1.22	1.05	86.0656	0.1	8.2	sli	50	50	STR		
15.85	17.07	1.22	0.44	36.0656	0	0	sof	55	55	SFT		
17.07	17.98	0.91	0.5	54.9451	0	0	sof	100	100	SFT		
17.98	19.51	1.53	1.04	67.9738	0	0	sof	100	100	SFT		
19.51	20.73	1.22	0.65	53.2787	0	0	sli	100	100	STR		
20.73	21.64	0.91	0.33	36.2637	0	0	mode	100	100	STR		
21.64	22.56	0.92	0.76	82.6087	0	0	sli	100	100	STR		
22.56	24.08	1.52	0.123	8.09210	0	0	sli	100	100	STR		
24.08	24.69	0.61	0.58	95.0819	0	0	sli	100	100	STR		
24.69	25.6	0.91	0.8	87.9121	0	0	sli	100	100	STR		
25.6	27.13	1.53	1.42	92.8105	0.12	7.84	sli	100	100	STR		
27.13	27.74	0.61	0.44	72.1311	0	0	sof	9	9	STR		
27.74	28.65	0.91	0.42	46.1539	0.13	14.29	sli	20	20	STR		
28.65	29.87	1.22	1.08	88.5245	0.21	17.21	sli	75	75	STR		
29.87	31.01	1.14	0.92	80.7018	0	0	sli	40	40	STR		
31.01	32.31	1.3	1.24	95.3845	0	0	sli	100	100	STR		
32.31	33.53	1.22	1.24	101.64	0.2	16.39	sli	100	100	STR		
33.53	34.75	1.22	1.23	100.82	0	0	sli	100	100	STR		
34.75	36.27	1.52	1.51	99.3421	0.1	6.58	sli	100	100	STR		
36.27	37.8	1.53	1.25	81.6994	0.13	8.5	mode	100	100	STR		
37.8	39.31	1.51	0.88	58.2781	0.19	12.58	mode	100	100	STR		
39.31	42.36	3.05	2.01	65.9017	0	0	mode	90	90	STR		
42.36	43.58	1.22	1.08	88.5245	0	0	mode	100	100	STR		
43.58	45.11	1.53	1.24	81.0458	0.66	43.14	mode	75	75	STR		
45.11	47.24	2.13	0.76	35.6807	0	0	sof	100	100	STR		
47.24	50.29	3.05	1.09	35.7377	0	0	sof	100	100	STR		
50.29	53.34	3.05	0	0	0	0	non	0	0	NA		
53.34	54.55	1.21	0.05	4.13224	0	0	mode	10	10	STR		
54.55	57.6	3.05	0.75	24.5902	0.12	3.93	mode	100	100	STR		

Hole ID: **ORO13-08**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
57.6	59.13	1.53	0.76	49.6731	0.12	7.84	sof	100	100	STR		trace graphite.
59.13	60.65	1.52	0.96	63.1579	0	0	sof	100	100	STR		
60.65	63.09	2.44	1.25	51.2295	0	0	sof	100	100	STR		
63.09	66.14	3.05	2.79	91.4754	0.68	22.3	mode	100	100	STR		
66.14	67.66	1.52	1.15	75.6577	0	0	mode	100	100	STR		
67.66	69.79	2.13	2.13	100.000	0.29	13.62	sli	100	100	STR		
69.79	71.62	1.83	1.67	91.2567	0.34	18.58	mode	70	70	STR		
71.62	74.67	3.05	2.87	94.0985	1.45	47.54	sli	43	43	STR		
74.67	75.89	1.22	0.3	24.5901	0	0	sli	27	27	STR		
75.89	78.02	2.13	0.52	24.4132	0.1	4.69	sli	32	32	STR		
78.02	78.94	0.92	0.12	13.0434	0	0	sli	22	22	STR		
78.94	79.85	0.91	0.1	10.9891	0	0	sli	45	45	STR		
79.85	81.07	1.22	0.12	9.83606	0	0	sli	37	37	STR		
81.07	81.99	0.92	0.06	6.52175	0	0	sli	42	42	STR		
81.99	83.82	1.83	0.39	21.3115	0	0	sli	100	100	STR		
83.82	85.03	1.21	0.39	32.2314	0	0	sli	100	100	STR		
85.03	88.08	3.05	1.27	41.6393	0	0	sli	100	100	STR		
88.08	89	0.92	0.35	38.0436	0	0	sli	100	100	STR		
89	90.22	1.22	0.28	22.9508	0	0	non	50	50	STR		
90.22	91.13	0.91	0.2	21.9781	0	0	non	50	50	STR		
91.13	92.05	0.92	0.32	34.7824	0.1	10.87	non	10	10	STR		
92.05	92.66	0.61	0.25	40.9836	0	0	non	50	50	STR		
92.66	93.59	0.93	0.65	69.8930	0.1	10.75	non	25	25	STR		
93.59	94.49	0.9	0.37	41.1110	0	0	sli	25	25	STR		
94.49	95.1	0.61	0.19	31.1475	0	0	sli	25	25	STR		
95.1	95.4	0.3	0	0	0	0						
95.4	96.01	0.61	0.47	77.0491	0	0	sli	15	15	STR		
96.01	96.32	0.31	0	0	0	0						
96.32	97.23	0.91	0.3	32.9669	0	0	sli	25	25	STR		
97.23	98.15	0.92	0.4	43.4784	0	0	sli	10	10	STR		
98.15	98.76	0.61	0.31	50.8196	0	0	sli	6	6	STR		
98.76	99.97	1.21	0.5	41.3224	0	0	sli	35	35	STR		
99.97	101.5	1.53	1.25	81.6994	0.24	15.69	sli	25	25	STR		
101.5	102.07	0.57	0.35	61.4035	0	0	sli	50	50	SFT		
102.07	103.63	1.56	0.26	16.6667	0.1	6.41	non	8	8	STR		
103.63	104.85	1.22	0.99	81.1475	0.18	14.75	sli	23	23	STR		
104.85	106.38	1.53	1.52	99.3465	0.11	7.19	sli	50	50	STR		
106.38	107.96	1.58	1.55	98.1012	0.44	27.85	sli	28	28	STR		
107.96	109.42	1.46	1.25	85.6165	0.78	53.42	sli	20	20	STR		

Hole ID: **ORO13-08**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
109.42	110.95	1.53	1.4	91.5033	0.66	43.14	sli	28	28	STR		
110.95	112.47	1.52	1.36	89.4734	0.9	59.21	sli	22	22	STR		
112.47	112.78	0.31	0.38	122.582	0.28	90.32	sli	6	6	STR		
112.78	115.52	2.74	2.07	75.5475	1.02	37.23	sli	34	34	STR		
115.52	117.96	2.44	2.04	83.6065	0.75	30.74	sli	35	35	STR		
117.96	121.01	3.05	2.84	93.1147	2.36	77.38	sli	10	10	STR		
121.01	121.62	0.61	0.47	77.0491	0	0	sli	12	12	STR		
121.62	124.66	3.04	2.76	90.7894	1.62	53.29	sli	16	16	STR		
124.66	127.71	3.05	2.48	81.3116	1.25	40.98	sli	30	30	STR		
127.71	129.54	1.83	1.55	84.6997	0.8	43.72	sli	30	30	STR		
129.54	131.67	2.13	1.56	73.2393	0.53	24.88	sli	25	25	STR		
131.67	133.81	2.14	1.7	79.4393	0.79	36.92	sli	50	50	STR		
133.81	134.72	0.91	0.5	54.9448	0	0	sli	50	50	STR		
134.72	135.33	0.61	0.4	65.5737	0	0	sli	30	30	STR		
135.33	135.64	0.31	0	0	0	0						
135.64	136.86	1.22	0.85	69.6721	0.1	8.2	sli	20	20	STR		
136.86	138.38	1.52	1.28	84.2103	0.29	19.08	sli	35	35	STR		
138.38	139.9	1.52	0.91	59.8689	0.11	7.24	sli	55	55	STR		
139.9	140.51	0.61	0.49	80.3278	0	0	sli	55	55	STR		
140.51	142.04	1.53	0.58	37.9085	0	0	mode	50	50	STR		
142.04	142.95	0.91	0.27	29.6702	0	0	sli	50	50	STR		
142.95	143.56	0.61	0.6	98.3606	0	0	sli	55	55	STR		
143.56	145.08	1.52	1.23	80.9208	0.27	17.76	sli	45	45	STR		
145.08	146	0.92	0.49	53.261	0	0	sli	40	40	STR		
146	146.77	0.77	0.37	48.0517	0	0	sli	40	40	STR		
146.77	147.98	1.21	0.63	52.0665	0	0	sli	20	20	STR		
147.98	149.1	1.12	0.53	47.321	0	0	sli	50	50	STR		
149.1	149.96	0.86	0	0								
149.96	150.88	0.92	0.34	36.9566	0	0	sli	100	100	STR		
150.88	151.5	0.62	0.1	16.1292	0	0	sli	20	20	STR		
151.5	152.7	1.2	0.2	16.6667	0	0	sli	100	100	STR		
152.7	153.92	1.22	0.15	12.2951	0	0	sli	100	100	STR		
153.92	155.14	1.22	0.35	28.6885	0	0	sli	100	100	STR		
155.14	157.28	2.14	0.54	25.2337	0	0	sli	100	100	STR		
157.28	158.5	1.22	0.73	59.8360	0	0	sof	100	100	SFT		
158.5	160.48	1.98	0.53	26.7677	0	0	sof	100	100	SFT		
160.48	162.46	1.98	0.08	4.04038	0	0	sof	100	100	SFT		
162.46	163.68	1.22	0.1	8.19682	0	0	sli	100	100	STR		
163.68	164.29	0.61	0.25	40.9836	0	0	sof	100	100	SFT		

Hole ID: **ORO13-08**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
164.29	167.34	3.05	0.22	7.21311	0	0	sli	100	100	STR		
167.34	170.38	3.04	0.4	13.1579	0	0	sli	100	100	STR		
170.38	171.6	1.22	0.38	31.1475	0	0	sof	75	75	SFT		
171.6	173.43	1.83	0.23	12.5684	0	0	sof	25	25	SFT		
173.43	174.35	0.92	0.58	63.0426	0	0	sli	50	50	STR		
174.35	175.26	0.91	0.8	87.9132	0	0	sli	25	25	STR		
175.26	177.7	2.44	1.25	51.2295	0.2	8.2	sof	20	20	STR		
177.7	179.22	1.52	0.57	37.4999	0	0	sof	100	100	SFT		
179.22	181.97	2.75	2.25	81.8182	1.07	38.91	sli	20	20	STR		
181.97	184.4	2.43	1.95	80.2472	1.36	55.97	sli	15	15	STR		
184.4	185.62	1.22	0.33	27.0492	0	0	sof	50	50	SFT		
185.62	187.15	1.53	1.23	80.3922	0	0	sof	75	75	SFT		
187.15	190.2	3.05	2.47	80.9835	1.31	42.95	sli	20	20	STR		
190.2	191.41	1.21	0.9	74.3798	0	0	sof	100	100	STR		
191.41	192.94	1.53	1.2	78.4314	0.17	11.11	sof	100	100	STR		
192.94	193.85	0.91	0.66	72.5272	0	0	sli	35	35	STR		
193.85	195.38	1.53	1.05	68.6275	0	0	sli	55	55	STR		
195.38	196.9	1.52	1.32	86.8427	0	0	sof	50	50	SFT		
196.9	198.42	1.52	0.9	59.2104	0	0	sof	40	40	SFT		
198.42	199.03	0.61	0.37	60.6557	0	0	sli	50	50	STR		
199.03	201.78	2.75	2.47	89.8182	1.28	46.55	sli	15	15	STR		
201.78	203.41	1.63	2.03	124.54	1.18	72.39	sli	14	14	STR		
203.41	206.96	3.55	2.68	75.4929	1.15	32.39	sli	20	20	STR		
206.96	210.01	3.05	2.91	95.4102	2.32	76.07	sli	19	19	STR		
210.01	213.06	3.05	2.9	95.0819	2.5	81.97	sli	19	19	STR		
213.06	216.1	3.04	2.64	86.8419	1.9	62.5	sli	20	20	STR		
216.1	217.95	1.85	1.58	85.4058	0.64	34.59	sli	40	40	STR		
217.95	219.15	1.2	0.3	25.0001	0	0	sli	50	50	STR		
219.15	221.59	2.44	1.74	71.3114	0.61	25	sli	40	40	STR		
221.59	223.42	1.83	1.07	58.4699	0.22	12.02	sof	100	100	SFT		
223.42	225.25	1.83	1.4	76.5027	0.4	21.86	sli	60	60	STR		
225.25	226.47	1.22	0.8	65.5737	0.2	16.39	sli	50	50	STR		
226.47	228.3	1.83	1.52	83.0600	0.43	23.5	sli	25	25	STR		
228.3	230.43	2.13	2.13	100.001	1	46.95	sli	20	20	STR		
230.43	231.34	0.91	0.82	90.1095	0.6	65.93	sli	8	8	STR		
231.34	234.39	3.05	2.6	85.2458	1.76	57.7	sli	22	22	STR		
234.39	236.37	1.98	1.6	80.8083	1.06	53.54	sli	30	30	STR		
236.37	237.44	1.07	0.56	52.3361	0	0	sof	50	50	STR		
237.44	238.35	0.91	0.75	82.4173	0	0	sof	100	100	STR		

GeoSpark Logger Print Logs ~ Geotechnical

Hole ID: **ORO13-08**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
238.35	239.73	1.38	0.43	31.1597	0	0	sli	40	40	STR		
239.73	240.79	1.06	0.95	89.6229	0.15	14.15	sli	30	30	STR		
240.79	242.32	1.53	0.84	54.9015	0.16	10.46	sli	25	25	STR		
242.32	243.54	1.22	0.82	67.2139	0	0	sli	55	55	STR		
243.54	244.15	0.61	0.4	65.5737	0	0	sli	25	25	STR		
244.15	246.28	2.13	1.39	65.2581	0.53	24.88	sli	20	20	STR		
246.28	247.19	0.91	0.76	83.5161	0	0	sli	26	26	STR		
247.19	249.63	2.44	1.95	79.918	0.91	37.3	sli	31	31	STR		
249.63	251.16	1.53	0.92	60.1308	0.14	9.15	sli	40	40	STR		
251.16	252.68	1.52	0.55	36.1845	0	0	sli	100	100	STR		
252.68	254.2	1.52	1.08	71.0524	0.11	7.24	sli	35	35	STR		
254.2	256.64	2.44	1.09	44.6718	0	0	sof	100	100	SFT		
256.64	257.71	1.07	0.95	88.787	0	0	sof	50	50	SFT		
257.71	258.78	1.07	0.95	88.7844	0	0	sof	60	60	SFT		
258.78	260.3	1.52	0.76	50.0004	0	0	sof	60	60	SFT		

GeoSpark Logger Print Logs ~ Mag Susceptibility

DataSet: ORO_GF

Hole ID: ORO13-08

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
4.57	6	1.43	0.006	0.054	0.135	0.065				
6	8	2	0.021	0.024	0.148	0.064				
8	10	2	0.101	0.007	0.019	0.042				
10	12	2	-0.087	0.028	0.022	-0.012				
12	14	2	0.107	0.048	0.051	0.069				
14	16.1	2.1	0.007	0.031	0.015	0.018				
16.1	18	1.9	0.024	0.016	0.046	0.029				
18	19.51	1.51	0.038	0.02	0.138	0.065				
19.51	22	2.49	0.017	0.018	0.048	0.028				
22	24	2	0.097	0.036	0.011	0.048				
24	26	2	0.03	0.025	0.094	0.05				
26	28	2	0.017	0.03	0.021	0.023				
28	30	2	0.035	0.019	0.204	0.086				
30	32	2	0.176	0.086	0.011	0.091				
32	34	2	0.068	0.056	0.11	0.078				
34	35.3	1.3	0.019	0.008	0.025	0.017				
35.3	37	1.7	0.058	0.009	0.003	0.023				
37	37.85	0.85	-0.072	-0.863	0.014	-0.307				
37.85	39.31	1.46	0.038	0.051	0.013	0.034				
39.31	42	2.69	0.022	-0.001	-0.175	-0.051				
42	44	2	0.041	0.018	-0.004	0.018				
44	45.11	1.11	0.147	0.047	0.025	0.073				
45.11	47	1.89	0.007	0.011	0.134	0.051				
47	50.29	3.29	0.044	0.027	-0.001	0.023				
50.29	57.6	7.31	0.102	0.013	0.209	0.108				
57.6	60	2.4	0.04	0.02	-0.002	0.019				
60	62	2	0.014	0.219	0.043	0.092				
62	64	2	0.086	0.009	0.466	0.187				
64	66	2	0.05	0.117	-0.002	0.055				
66	68	2	0.202	0.002	0.239	0.148				
68	70	2	0.278	0.031	0.022	0.11				
70	71.83	1.83	0.016	0.021	0.116	0.051				
71.83	73	1.17	0.02	0.007	0.181	0.069				
73	74.67	1.67	0.01	0.022	0.525	0.186				
74.67	78.02	3.35	0.042	0.011	0.009	0.021				
78.02	82	3.98	0.109	0.138	0.102	0.116				
82	85	3	0.145	0.014	0.012	0.057				

GOLD FIELDS

GeoSpark Logger Print Logs ~ Mag Susceptibility

Hole ID: **ORO13-08**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
85	87	2	0.007	0.041	0.031	0.026				
87	89	2	0.386	0.34	0.027	0.251				
89	91	2	0.264	0.031	0.128	0.141				
91	93	2	0.149	0.018	0.145	0.104				
93	95	2	0.154	0.039	0.12	0.104				
95	97	2	0.207	0.019	0.009	0.078				
97	99	2	0.025	0.005	0.002	0.011				
99	101	2	0.035	0.007	-0.07	-0.009				
101	101.5	0.5	0.204	0.02	0.041	0.088				
101.5	103.02	1.52	0.001	0.01	0.102	0.038				
103.02	105	1.98	0.025	0.004	0.014	0.014				
105	107	2	0.007	0.004	0.166	0.059				
107	109	2	0	0.024	0.134	0.053				
109	111	2	0.004	0.028	0.011	0.014				
111	113	2	0.012	-0.001	0.001	0.004				
113	115	2	0.013	0.226	0.335	0.191				
115	117	2	0.262	0.145	-0.003	0.135				
117	119	2	0.002	0.005	0.121	0.043				
119	121	2	0.496	0.008	0.003	0.169				
121	123	2	0.011	0.004	0.011	0.009				
123	125	2	0.012	0.055	0.135	0.067				
125	127	2	0.01	0.003	0.015	0.009				
127	129	2	0.037	0.013	-0.002	0.016				
129	131	2	0.008	0	0	0.003				
131	133	2	0.37	0.115	0.02	0.168				
133	135	2	-0.007	-0.003	0.002	-0.003				
135	137	2	-0.006	0.007	-0.007	-0.002				
137	139	2	0.231	0	0	0.077				
139	141	2	0.025	0.138	-0.001	0.054				
141	143	2	0.192	-0.008	0.006	0.063				
143	145	2	0.003	-0.004	0.055	0.018				
145	147	2	0.046	0.004	0.008	0.019				
147	150	3	0	0.012	0.018	0.01				
150	157.28	7.28	-0.002	-0.001	-0.004	-0.002				
157.28	160.48	3.2	0.46	0.002	-0.275	0.062				
160.48	167.34	6.86	0.131	0	0.006	0.046				
167.34	173.43	6.09	0.001	0.139	0.003	0.048				
173.43	175.26	1.83	0.116	0.009	0.005	0.043				
175.26	177.7	2.44	0	-0.011	0.005	-0.002				

GOLD FIELDS

GeoSpark Logger Print Logs ~ Mag Susceptibility

Hole ID: **ORO13-08**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
177.7	179.22	1.52	0.01	0.205	0.013	0.076				
179.22	181	1.78	0.014	0.008	0	0.007				
181	183	2	0.004	-0.003	-0.001	0				
183	184	1	0.004	0.004	0.001	0.003				
184	185.62	1.62	0.003	0.322	-0.005	0.107				
185.62	187.15	1.53	-0.005	0.003	0.003	0				
187.15	190	2.85	0.289	0.007	0	0.099				
190	192	2	-0.006	0.845	0.636	0.492				
192	194	2	0.01	1.28	0.012	0.434				
194	195.6	1.6	0.008	0.029	0.012	0.016				
195.6	197.7	2.1	0	0.014	1.65	0.555				
197.7	199	1.3	0.004	2.2	0.613	0.939				
199	201	2	0.022	0.001	-0.007	0.005				
201	203	2	0.005	-0.007	0.011	0.003				
203	205	2	-0.003	0.262	0.001	0.087				
205	207	2	-0.004	-0.003	-0.002	-0.003				
207	209	2	-0.001	0.01	0	0.003				
209	211	2	0.017	0.015	0.005	0.012				
211	213	2	0.008	0.003	0.015	0.009				
213	215	2	0.399	0.098	-0.003	0.165				
215	217	2	0.004	0.026	0.03	0.02				
217	219	2	0.011	0.54	0.02	0.19				
219	221	2	0.015	0	0.011	0.009				
221	223	2	0.744	0.013	0.58	0.446				
223	225	2	0.023	0.156	0.004	0.061				
225	227	2	0.008	0.018	0.006	0.011				
227	229	2	0.3	0	0.007	0.102				
229	231	2	0.02	0.002	0.524	0.182				
231	233	2	0.014	0.163	0.01	0.062				
233	235	2	-0.001	0.003	0.004	0.002				
235	237	2	0.242	0.168	0	0.137				
237	239.73	2.73	1.37	0.002	0.206	0.526				
239.73	242	2.27	0.018	0.119	-0.006	0.044				
242	244	2	-0.003	0.012	0.002	0.004				
244	246	2	0.018	0.053	1.86	0.644				
246	248	2	0.01	0.24	0.075	0.108				
248	250	2	0.031	0.322	0.006	0.12				
250	252	2	0.01	0.006	0.012	0.009				
252	254	2	0.289	0.024	0.031	0.115				

GeoSpark Logger Print Logs ~ Mag Susceptibility

Hole ID: **ORO13-08**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
254	256	2	1.4	-0.004	0.033	0.476				
256	258	2	0.015	1.35	2.54	1.302				
258	260.3	2.3	0.039	0.34	0.294	0.224				

GeoSpark Logger Print Logs ~ DH Samples

DataSet: ORO_GF

Hole ID: ORO13-08

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
4.57	6	Q186766	HC	TimS	☐	
6	8	Q186767	HC	TimS	☑	
8	10	Q186768	HC	TimS	☐	
10	12	Q186769	HC	TimS	☐	
12	14	Q186771	HC	TimS	☐	
14	16.1	Q186772	HC	TimS	☐	
16.1	18	Q186773	HC	TimS	☐	
18	19.51	Q186774	HC	TimS	☐	
19.51	22	Q186775	HC	TimS	☐	
22	24	Q186776	HC	TimS	☐	
24	26	Q186777	HC	TimS	☐	
26	28	Q186778	HC	TimS	☐	
28	30	Q186779	HC	TimS	☐	
30	32	Q186781	HC	TimS	☑	
32	34	Q186783	HC	TimS	☐	
34	35.3	Q186784	HC	TimS	☐	
35.3	37	Q186785	HC	TimS	☐	
37	37.85	Q186786	HC	TimS	☐	
37.85	39.31	Q186787	HC	TimS	☐	
39.31	42	Q186788	HC	TimS	☐	
42	44	Q186789	HC	TimS	☐	
44	45.11	Q186791	HC	TimS	☐	
45.11	47	Q186792	HC	TimS	☐	
47	50.29	Q186793	HC	TimS	☐	
50.29	57.6	Q186794	HC	TimS	☐	Composite sample over core loss zone. Sampled block- block
57.6	60	Q186795	HC	TimS	☐	
60	62	Q186796	HC	TimS	☑	
62	64	Q186797	HC	TimS	☐	
64	66	Q186798	HC	TimS	☐	
66	68	Q186799	HC	TimS	☐	
68	70	Q186801	HC	TimS	☐	
70	71.83	Q186802	HC	TimS	☐	
71.83	73	Q186803	HC	TimS	☐	
73	74.67	Q186804	HC	TimS	☐	
74.67	78.02	Q186805	HC	TimS	☐	
78.02	82	Q186806	HC	TimS	☐	
82	85	Q186807	HC	TimS	☐	

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-08**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
85	87	Q186808	HC	TimS	☑	
87	89	Q186811	HC	TimS	☐	
89	91	Q186812	HC	TimS	☐	
91	93	Q186813	HC	TimS	☐	
93	95	Q186814	HC	TimS	☐	
95	97	Q186815	HC	TimS	☐	
97	99	Q186816	HC	TimS	☐	
99	101	Q186817	HC	TimS	☐	
101	101.5	Q186818	HC	TimS	☑	
101.5	103.02	Q186819	HC	TimS	☐	
103.02	105	Q186821	HC	TimS	☐	
105	107	Q186822	HC	TimS	☐	
107	109	Q186823	HC	TimS	☐	
109	111	Q186824	HC	TimS	☐	
111	113	Q186825	HC	TimS	☐	
113	115	Q186826	HC	TimS	☐	
115	117	Q186827	HC	TimS	☐	
117	119	Q186828	HC	TimS	☐	
119	121	Q186829	HC	TimS	☐	
121	123	Q186831	HC	TimS	☐	
123	125	Q186832	HC	TimS	☑	
125	127	Q186833	HC	TimS	☐	
127	129	Q186834	HC	TimS	☑	
129	131	Q186835	HC	TimS	☐	
131	133	Q186836	HC	TimS	☑	
133	135	Q186838	HC	TimS	☐	
135	137	Q186839	HC	TimS	☐	
137	139	Q186841	HC	TimS	☐	
139	141	Q186842	HC	TimS	☐	
141	143	Q186843	HC	TimS	☐	
143	145	Q186844	HC	TimS	☐	
145	147	Q186845	HC	TimS	☐	
147	150	Q186846	HC	TimS	☐	
150	157.28	Q186847	HC	TimS	☐	
157.28	160.48	Q186848	HC	TimS	☐	
160.48	167.34	Q186849	HC	TimS	☐	
167.34	173.43	Q186851	HC	TimS	☐	
173.43	175.26	Q186852	HC	TimS	☐	
175.26	177.7	Q186853	HC	TimS	☐	

Hole ID: **ORO13-08**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
177.7	179.22	Q186854	HC	TimS	☐	
179.22	181	Q186855	HC	TimS	☐	
181	183	Q186856	HC	TimS	☐	
183	184	Q186857	HC	TimS	☐	
184	185.62	Q186858	HC	TimS	☐	
185.62	187.15	Q186859	HC	TimS	☐	
187.15	190	Q186861	HC	TimS	☐	
190	192	Q186862	HC	TimS	☐	
192	194	Q186863	HC	TimS	☐	
194	195.6	Q186864	HC	TimS	☑	
195.6	197.7	Q186866	HC	TimS	☐	
197.7	199	Q186867	HC	TimS	☐	
199	201	Q186868	HC	TimS	☑	
201	203	Q186869	HC	TimS	☐	
203	205	Q186871	HC	TimS	☑	
205	207	Q186872	HC	TimS	☐	
207	209	Q186873	HC	TimS	☑	
209	211	Q186874	HC	TimS	☐	
211	213	Q186875	HC	TimS	☐	
213	215	Q186876	HC	TimS	☐	
215	217	Q186877	HC	TimS	☐	
217	219	Q186878	HC	TimS	☐	
219	221	Q186879	HC	TimS	☐	
221	223	Q186881	HC	TimS	☐	
223	225	Q186882	HC	TimS	☐	
225	227	Q186883	HC	TimS	☐	
227	229	Q186884	HC	TimS	☐	
229	231	Q186885	HC	TimS	☐	
231	233	Q186886	HC	TimS	☐	
233	235	Q186887	HC	TimS	☐	
235	237	Q186888	HC	TimS	☐	
237	239.73	Q186889	HC	TimS	☐	
239.73	242	Q186891	HC	TimS	☐	
242	244	Q186892	HC	TimS	☐	
244	246	Q186893	HC	TimS	☑	
246	248	Q186894	HC	TimS	☑	
248	250	Q186896	HC	TimS	☐	
250	252	Q186897	HC	TimS	☐	
252	254	Q186898	HC	TimS	☐	

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-08**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
254	256	Q186899	HC	TimS	☐	
256	258	Q186901	HC	TimS	☐	
258	260.3	Q186902	HC	TimS	☑	

GeoSpark Logger Print Logs ~ Duplicate Samples

DataSet: ORO_GF

Hole ID: ORO13-08

From (m)	To (m)	Sample ID	Original Sample ID	QC Category	Comments
6	8	Ch:Q186767	Q186767	LABCHCK	
30	32	Q186782	Q186781	FD	
60	62	Ch:Q186796	Q186796	LABCHCK	
85	87	Q186809	Q186808	FD	
101	101.5	Pd:Q186818	Q186818	PREPCHK	
123	125	Ch:Q186832	Q186832	LABCHCK	
127	129	Ch:Q186834	Q186834	LABCHCK	
131	133	Q186837	Q186836	FD	
194	195.6	Q186865	Q186864	FD	
199	201	Ch:Q186868	Q186868	LABCHCK	
203	205	Pd:Q186871	Q186871	PREPCHK	
207	209	Ch:Q186873	Q186873	LABCHCK	
244	246	Ch:Q186893	Q186893	LABCHCK	
246	248	Q186895	Q186894	FD	
258	260.3	Ch:Q186902	Q186902	LABCHCK	

GeoSpark Logger Print Logs ~ Standards / Blanks

DataSet: **ORO_GF**

Hole ID: **ORO13-08**

Sample ID	Standard ID	Comments
Q186770	FB	
Q186780	CDN-CM-25	
Q186790	FB	
Q186800	CDN-GS-5L	
Q186810	FB	
Q186820	CDN-CM-25	
Q186830	FB	
Q186840	CDN-GS-5L	
Q186850	FB	
Q186860	CDN-CM-25	
Q186870	FB	
Q186880	CDN-GS-5L	
Q186890	FB	
Q186900	CDN-CM-25	

Gold Fields Selwyn – Quicklog 2012

<table>
<tr><td>Hole no: ORO13-09
Logged By: Tim Stubley</td><td>Az: 060</td><td>Dip:
-55</td><td>Target depth:
200</td><td colspan="2">EOH: 175.26 m</td></tr>
<tr><td>Start date: Aug 18, 2013</td><td>End date:
Aug 20, 2013</td><td>Pad:
ORO13-S</td><td>E: 404443</td><td>N: 7020625</td><td>Elevation:
1390 m</td></tr>
<tr><td colspan="3">Target:
ORO13-09 targets a specific soil sample which contained ~830 ppb Au within an elevated Au soil polygon in addition to anomalous indicator elements (As, Hg, Sb). It also targets elevated rock samples with anomalously high gold values in surface rock samples (~1.5 g/t) from 2012 trenching and grab samples. In addition, ORO13-09 is targeting the interpreted intersection of the geochemically anomalous Caribou Pass Chert pebble conglomerate at depth.</td><td colspan="3">Target explained?
Intersected fault zones and common multiply - folded interbeds indicate a high strain zone. Shale may take up most strain, so visible deformation occurs in more brittle beds of quartzite. Apparent pyrite partial flooding of quartzite beds below 63.28 m may indicate a quartzite protolith for the massive pyrite ‘beds’ in the higher strain zone up hole.</td></tr>
<tr><td colspan="6">Summary:
Location: ORO13-09 is located approximately 3.5 km east of the Main Zone in the Golden Hinge area.
Lithology: Overburden to 7.61 m. Sulphitic black shale extends to a fault between 10.15 m and 17 m, followed by sulphitic black shale with local ‘beds’ of massive pyrite to 34.87 m. A zone of partially quartz vein - healed fault brecciated shale extends to 41.14 m, followed by sulphitic black shale with local massive pyrite ‘beds’ to 56.39 m. Between 56.39 and 63.28 m, another zone of partially healed fault breccia occurs, followed by sulphitic black shale with quartzite interbeds to 152.1 m. Siliceous, pyrite bearing black shale with minor thin folded and sheared quartzite beds extends from 152. 1 m to EOH at 175.26 m.
Alteration: Weak clay alteration exists within fracture planes. Massive pyrite zones appear to have secondary pyrite growth or recrystallisation, and are shot with quartz+ankerite veins. Vein envelope to locally pervasive silica alteration may occur proximal to these zones. Locally, some of the quartzite below the fault ending at 63.28 m appears to have been ‘flooded’ by pyrite proximal to shale contacts.
Mineralization: Pyrite occurs in several forms: within shale units it may be finely disseminated or aligned on wispy horizons. Circular to amorphous nodules, massive bands and local rare veinlets also occur in shale. Massive pyrite zones appear to have several generations of growth, including very fine- grained (almost aphanitic) pyrite, coarse - grained fuzzy edged euhedral to framboidal pyrite, and local stringer vein-like overprint. Abundant disseminated pyrite occurs within quartzite locally.
Interpretation/Comments: Intersected fault zones and common multiply - folded interbeds indicate a high strain zone. Shale may take up most strain, so visible deformation occurs in more brittle beds of quartzite. Apparent pyrite partial flooding of quartzite beds below 63.28 m may indicate a quartzite protolith for the massive pyrite ‘beds’ in the higher strain zone up hole.</td></tr>
</table>

Shift	**From**	**To**	**Comments**
Aug 18/13 0 – 60.20m	**0**	**7.61**	**Overburden**
	7.61	**10.15**	**Sulphitic black shale (ShU)** Black sulphitic shale. Blocky and weathered. Strong brown-orange FeOx alteration coats fractures. Trace disseminated pyrite.
	10.15	**17**	**Fault, massive pyrite (Flt)** Interval dominated by black shale rubble and gouge. Common core

			loss in sections >60cm. Rubble includes a massive pyrite zone from 10.15 - 10.35m that contains quartz veins <2mm. Massive pyrite occurs in chunks throughout interval. **Py ~50%**
	17	**25.3**	**Sulphitic black shale (ShU)** Thinly bedded to massive black sulphitic shale. Blocky, common minor faults. Cleavage ~15° tca, may parallel bedding (low confidence). Weakly disseminated pyrite and rare thin wispy pyrite (possible interbeds). **Py ~2%**
	25.3	**33.22**	**Sulphitic black shale with nodular massive pyrite (ShU)** Thinly bedded to massive black shale. Abundant pyrite; occurs as medium grained dissemination, amorphous nodules, wispy aggregates and massive bands <4cm (beds?). Nodules and aggregates appear strained, possibly folded locally. Rare quartz±barite+ankerite veins <3mm, preferentially occur within massive pyrite. **Py ~30%**
	33.22	**34**	**Massive pyrite (UA)** Massive pyrite occurs in two forms: very fine grained (almost aphanitic), and crowded <1mm euhedral to framboidal crystals in a dark siliceous groundmass. Boundaries between the two are strained and sheared. Common quartz±barite±ankerite±pyrite veins <4mm cross cut pyrite boundaries at ~30°tca. **Py ~90%**
	34	**34.87**	**Sulphitic black shale with nodular massive pyrite(ShU)** Massive black shale, common nodular and wispy aggregate pyrite. Strongly sheared ~30 – 40°tca. **Py ~20%**
	34.87	**40.53**	**Fault breccia (FaultBx, ShU)** Partially healed fault breccia, common gouge and minor shears. Strong tectonic fabric ~30°tca, partially defined by strained and broken milky quartz±ankerite±barite veins < 10mm in black shale. Rare clear quartz±pyrite veins may post date milky quartz veins; all are strained but clear variety are more intact. Common disseminated and nodular pyrite. Single zone (35.65- 35.82) massive pyrite is cut by stockwork quartz veins and appears to include a second generation of subhedral pyrite that overprints massive fine-grained pyrite. **Py ~20%**
	40.53	**41.14**	**Grey siliceous sulphitic shale (ShU)** Light grey siliceous shale with fault bounded upper and lower contacts. Abundant disseminated pyrite. Common quartz±ankerite veins <2mm. **Py ~3%**
	41.14	**56.39**	**Sulphitic black shale and massive pyrite (ShU, AU)**

			Massive, locally sheared black shale with zones massive pyrite <18cm. Common gouge and local quartz±ankerite±barite healed fault breccia; veins may be sheared or folded. Abundant disseminated pyrite occurs throughout shale sections. Massive pyrite sections again appear to have two possible generations of crystallisation, and are cut by stockwork quartz±barite±ankerite±pyrite vein. **Py ~30% (overall)**
	56.39	**63.28**	**Fault breccia (FaultBx, ShU)** Partially healed fault breccia, common gouge and minor shears. Strong tectonic fabric ~30°tca, partially defined by strained and broken milky quartz±ankerite±barite veins < 10mm in black shale. Common disseminated and nodular pyrite.
Aug 19, 2013 60.2 – 175.26 EOH	**63.28**	**76.18**	**Thinly bedded black shale with quartzite interbeds (ShU)** Thinly bedded shale and lesser quartzite interbeds. Bedding roughly parallel tca (10°) but ranges to 50° tca locally, commonly folded and offset by healed cm scale faults. Disseminated pyrite throughout, commonly concentrated in quartzite beds, including a single quartzite bed 71.12 – 71.3m which is replaced by (?) fine –grained pyrite and cut by sheeted quartz and pyrite stringers <2mm, perpendicular to bedding. These terminate against shale contact. Thin pyrite stringers also occur locally within shales. **Py ~ 5%**
	76.18	**80**	**Quartzite (Qzt)** Light grey fine- grained quartzite. Upper contact ~25° tca. Abundant disseminated and stringer veinlet- hosted pyrite at top of interval. Py appears to replace primary texture, but decreases with distance from upper contact. Stockwork quartz + ankerite±pyrite veins <5mm, 2 sets meet orthogonally at ~60° tca. **Py ~5%**
	80	**86.45**	**Laminated black shale (ShU)** Laminated (10 - 25° tca) shale and minor quartzite beds. Quartzites host sheeted quartz+ankerite veins. Single fragment (deformed bed?) of massive pyrite cut by sheeted ankerite veins at ~82.57 m. Weakly disseminated and rare stringer vein hosted pyrite throughout. **Py ~2%**
	86.45	**87.24**	**Quartzite** Light grey fine- grained quartzite. Upper contact ~25° tca. Stockwork quartz + ankerite±pyrite veins <5mm, 2 sets meet orthogonally at ~60° tca. **Py ~1%**
	87.24	**88.75**	**Laminated black shale (ShU)** Laminated (10 - 25° tca) shale and minor quartzite layers. Faulted upper and lower contacts ~30°tca. Graphite coated fracture planes.

			Trace disseminated pyrite
	88.75	**91.3**	**Quartzite** Light grey fine- grained quartzite. Upper contact ~25° tca. Stockwork quartz + ankerite±pyrite veins <5mm, 2 sets meet orthogonally at ~60° tca. Single vein ~5cm thick oriented 35° tca. Rare weakly disseminated pyrite. **Py ~0.5%**
	91.3	**124.7**	**Laminated black shale (ShU)** Laminated black mudstone with folded/faulted <2cm quartzite interbeds, and a single <20cm quartzite bed ~122 – 122.2 m. Bedding ranges from 10 to 50° tca. Polished graphite and greenish- blue clay mineral coat fracture planes. Disseminated pyrite occurs within folded quartzite bands, and as discrete horizons within mudstone. Rare nodular pyrite. **Py ~0.5%**
	124.7	**126.3**	**Quartzite** Light grey, thinly bedded to massive quartzite and <12cm interbeds black shale. Stockwork quartz + ankerite±pyrite veins <5mm, range from 10 – 40° tca. Abundant disseminated euhedral pyrite. **Py ~3%**
	126.3	**131**	**Thinly bedded black shale (ShU)** Thinly bedded black shale. Bedding ~ 40° tca. Rare quartz veins <3mm, ~50° tca. Graphite and clay coat fracture planes. Rare disseminated pyrite along discrete horizons. **Py ~0.5%**
	131	**131.82**	**Quartzite (Qzt)** Massive to bedded light grey quartzite. Single <5cm shale interbed oriented ~50° tca. Stockwork quartz±ankerite veins <3mm, dominantly oriented ~35° tca. Trace disseminated pyrite. **Py ~0.5%**
	131.82	**139.59**	**Thinly bedded black shale (ShU)** Thinly bedded (~30°tca) black shale. Common minor faulting and gouge. Single deformed interbed quartzite <10cm. Rare quartz±ankerite veins, and rare thin pyrite stringers ~20°tca. Wispy stretched aggregate pyrite, circular pyrite concretions <2cm with disseminated pyrite pressure shadows strained and disseminated pyrite along discrete horizons parallel to bedding in shale. Quartzite consists of ~50% disseminated pyrite. **Py ~ 10% overall.**
	139.59	**145.69**	**Quartzite (Qzt)** Massive light grey fine to medium grained quartzite. Common quartz±ankerite veins <2mm, ~50°tca, ~30/m, locally vuggy with euhedral crystals. Fine grained disseminated pyrite throughout. **Py ~2%**
	145.69	**150.21**	**Black shale (ShU)** Massive black shale. Common faults and gouge. Local faulted

			quartzite interbeds. Rare quartz±ankerite veins, 20 – 50° tca. Abundant disseminated pyrite; pyrite locally coats fracture planes. **Py ~ 4%**
	150.21	**152.1**	**Quartzite (Qzt)** Light grey –brownish massive fine grained quartzite. Abundant disseminated pyrite strongest at top of interval, decreasing downwards over ~40cm from contact with shale. Common quartz±pyrite±minor ankerite veins, <1mm, 10-50° tca, 35/m. **Py ~10%**
	152.1	**175.26**	**Siliceous shale (ShS)** Thinly bedded to massive black shale. More siliceous and competent than uphole. Breaks with semi- concoidal fracture. Common quartzite interbeds <3cm between 170 and 175m appear to have been multiply folded and sheared. Fracture planes coated in pale green-blue chalky clay mineral. Disseminated pyrite along local discrete horizons, local pyrite nodules and circular concretions. **Py~ 3%**

GeoSpark Logger Print Logs ~ Collars

DataSet: **ORO_GF**

Hole: ORO13-09

Depth (m)	Hole Type	Core Diamete	Grid ID	East	North	Elevation	Survey Method	Survey Date	Survey By	Date Started	Date Completed	Logged By	Prospect	Validated By
175.26 m	DD	HQ/NQ	UTM09N_NAD83	404443	7020625	1390	GPS	18/08/2013		18/08/2013	20/08/2013	TimS	Golden Hinge	

GeoSpark Logger Print Logs ~ DH Surveys

DataSet: ORO_GF

Hole ID: ORO13-09

Depth (m)	Survey Method	Grid ID	Dip	Surv. Tool Azimuth	Magnetic Declination	Corrected Azimuth	Magnetics	Date Surveyed	Survey Instrument	Bad Reading	Comments
0	COLL	UTM09N_NAD83	-55	60	0	60		21/08/2013	CMP	☐	
15.24	EZ Shot	UTM09N_NAD83	-56.1	38.7	22.5	61.2		19/08/2013	EZ	☐	
64.92	EZ Shot	UTM09N_NAD83	-56.8	38.8	22.5	61.3		19/08/2013	EZ	☐	
130.45	EZ Shot	UTM09N_NAD83	-55.5	40.1	22.5	62.6		19/08/2013	EZ	☐	
175.26	EZ Shot	UTM09N_NAD83	-55.4	39.3	22.5	61.8		20/08/2013	EZ	☐	

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Signed: ______________

DataSet: ORO_GF

Hole ID: ORO13-09

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	0	7.61	Overburden	Overburden (OB)	

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	7.61	10.15	Black Shale	undifferentiated shale	Black sulphitic shale. Blocky and weathered. Strong brown-orange FeOx alteration coats fractures. Trace disseminated pyrite.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	7.61	10.15	Py	0.2	DIS										trace disseminated pyrite

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	7.61	10.15	NoVeins	n/a											

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	7.61	13.7	RUB	S	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	10.15	17	Tectonic/Fault Rock - Undifferentiated	Fault (UT)	Interval dominated by black shale rubble and gouge. Common core loss in sections >60cm. Rubble includes a massive pyrite zone from 10.15 - 10.35m that contains quartz veins <2mm. Massive pyrite occurs in chunks throughout interval.

DataSet: ORO_GF

Hole ID: ORO13-09

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
10.15	17	Py	50	MASS										Rubble includes a massive pyrite zone from 10.15 - 10.35m that contains quartz veins <2mm. Massive pyrite occurs in chunks throughout interval. Py ~50%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
13.7	17	FLT	S	20

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	17	25.3	Black Shale	undifferentiated shale	Thinly bedded to massive black sulphitic shale. Blocky, common minor faults. Cleavage ~15° tca, may parallel bedding (low confidence). Weakly disseminated pyrite and rare thin wispy pyrite (possible interbeds). Py ~2%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
17	25.3	Py	2	DIS										Weakly disseminated pyrite and rare thin wispy pyrite (possible interbeds). Py ~2%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
17.68	18.3	RUB	S	
23.3	24.7			
24.7	24.8	FLTG		30

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	25.3	33.2	Black Shale	undifferentiated shale	Thnly bed - mass bk shale. Abun py: nod, fg dis, strained locally folded wispy agg, and mass bands <4cm. Rare qtz-bar-ank vns <3mm w/inmass py .

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DataSet: ORO_GF

Hole ID: ORO13-09

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
25.3	33.22	Py	30	AGG										Abundant pyrite; occurs as medium grained dissemination, amorphous nodules, wispy aggregates and massive bands <4cm (beds?). Nodules and aggregates appear strained, possibly folded locally.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
10.15	33.22	VQtz	±bar±carb	0.5										Rare quartz±barite+ankerite veins <3mm, preferentially occur within massive pyrite.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
25.8	25.82	FLTG	S	40
27.3	27.43			

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	33.2	34	Altered - Undifferentiated	Altered- Protolith (UA)	Mass py 2 forms: vfg-aphanitic, and crowded <1mm euh-framoidal xtal in sil gmass. Bdries btwn 2 are strained +sheared. quartz±barite±ankerite±pyrite veins <4mm cross cut pyrite boundaries at ~30°tca.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
33.22	34	Py	90	REPL										Massive pyrite occurs in two forms: very fine grained (almost aphanitic), and crowded <1mm euhedral to framboidal crystals in a dark siliceous groundmass. Boundaries between the two are strained and sheared.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
33.22	34	VQtz	±bar±carb	5										Common quartz±barite±ankerite±pyrite veins <4mm cross cut pyrite boundaries at ~30°tca.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	34	34.87	Black Shale	undifferentiated shale	Massive black shale, common nodular and wispy aggregate pyrite. Strongly sheared ~30 – 40°tca. Py ~20%

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DataSet: ORO_GF

Hole ID: ORO13-09

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
34	34.87	Py	20	AGG										Massive black shale, common nodular and wispy aggregate pyrite. Strongly sheared ~30 – 40°tca. Py ~20%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
34	34.87	NoVeins	n/a											

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
34	34.87	Py	20	AGG										Massive black shale, common nodular and wispy aggregate pyrite. Strongly sheared ~30 – 40°tca. Py ~20%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
34	34.87	NoVeins	n/a											

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	40.53	56.39	Black Shale	undifferentiated shale	Mass, sheared bk shale w/ zones mass py <18cm cut by stkwk qz-ank-bar vns. Comn gouge and locl qz-ank-bar-healed flt bx. Vns sheared +folded. Abun dis py.

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Signed: ______________

DataSet: ORO_GF

Hole ID: ORO13-09

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
40.53	41.14	Py	3	DIS										Fg disseminated pyrite
41.14	56.39		30											Abundant disseminated pyrite occurs throughout shale sections. Massive pyrite sections again appear to have two possible generations of crystallisation, and are cut by stockwork quartz±barite±ankerite±pyrite vein. Py ~30% (overall)

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
41.4	56.39	VQtz	±bar±carb	10	VQtz	±bar±carb	3							local quartz±ankerite±barite healed fault breccia; veins may be sheared or folded. Mass py zones are cut by stockwork quartz±barite±ankerite±pyrite veins.
40.53	41.4		±carb±bar	1										Qtz-ankerite+-barite

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
41.14	42.36	FLTG	S	
46.1	46.5	FLTBX		30
47.1	47.11	BED		40
47.7	47.71			50
48.1	48.11			40
50	51	RUB	S	
54.6	55			
55.25	55.77	FLTG		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	56.39	63.28	Fault Breccia	Fault breccia (UTB)	Partially healed fault breccia, common gouge and minor shears. Strong tectonic fabric ~30°tca, partially defined by strained and broken milky quartz±ankerite±barite veins < 10mm in black shale. Common disseminated and nodular pyrite.

Gold Fields Canada

Signed: ______________

DataSet: ORO_GF

Hole ID: ORO13-09

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
56.39	63.28	Py	0.1	DIS										Common disseminated and nodular pyrite.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
56.39	63.28	VQtz	±carb±bar	25										tectonic fabric ~30°tca, partially defined by strained and broken milky quartz±ankerite±barite veins < 10mm in black shale

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
56.39	56.56	FLTBX	S	30
56.56	56.94	FLTG		
56.94	58	FLTBX		
58	60.05	FLTG		
60.05	61.5	FLTBX		45
61.65	61.66	FLT		30
61.87	62.3			
62.5	63.4	FLTBX		40

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	63.28	76.18	Siltstone and Mudstone	undifferentiated shale	Thn bed ShU and minor qzt intrbds ~10°. Comn micro folds + flts offset beds. Dis Py th/out conc in qzt beds. Thin py str in shale.

DataSet: ORO_GF

Hole ID: ORO13-09

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
63.28	76.18	Py	10	DIS										Disseminated pyrite throughout, commonly concentrated in quartzite beds, including a single quartzite bed 71.12 – 71.3m which is replaced by (?) fg py and cut by sheeted quartz and pyrite stringers <2mm, perp to bedding. Rare Py str occur in shale also.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
63.28	76.18	VQtz	±py	1										Qzt bed ~71.12–71.3m repl by (?) fg py and cut by sheeted qtz+py stringers <2mm, perp to beds.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
63.8	63.82	FLT	S	30
65.85	65.86	BED		50
66.5	66.51			25
66.51	66.52	FOL		
66.9	66.91	BED		5
66.91	66.92	FOL		25
68.6	68.61	FLT		40
69.53	69.54			
69.79	69.8	BED		5
69.92	69.93			40
71.7	71.75	FLT	M	30

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	76.18	80	Sandstone	Quartzite - nonspecific	Lt grey fg qzt. Abun dis + strvn hosted py at top. Py repl primary texture but decr w/ depth. Stkwkquartz + ankerite±pyrite veins <5mm, 2 sets meet orthogonally at ~60° tca.

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DataSet: **ORO_GF**

Hole ID: **ORO13-09**

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
76.18	80	Py	5	REPL										disseminated and stringer veinlet- hosted pyrite at top of interval. Py appears to replace primary texture, but decreases with distance from upper contact. Stockwork quartz + ankerite±pyrite veins <5mm, 2 sets meet orthogonally at ~60° tca. Py ~5%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
76.18	80	VQtz	±carb±py	40										Stockwork quartz + ankerite±pyrite veins <5mm, 2 sets meet orthogonally at ~60° tca.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	80	86.45	Black Shale	undifferentiated shale	Lam ~10-25°tca shale and minor qzt beds. Qzts host sheeted quartz+ankerite veins. Single fragment (deformed bed?) of massive pyrite cut by sheeted ankerite veins at ~82.57 m. Weakly disseminated and rare stringer vein py th/out.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
80	86.45	Py	2	DIS										Single fragment (deformed bed?) of massive pyrite cut by sheeted ankerite veins at ~82.57 m. Weakly disseminated and rare stringer vein hosted pyrite throughout. Py ~2%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
80	86.45	Vpy	n/a	0.5	VQtz	±carb	1							Quartzites host sheeted quartz+ankerite veins. Single fragment (deformed bed?) of massive pyrite cut by sheeted ankerite veins at ~82.57 m. Weakly disseminated and rare stringer vein hosted pyrite

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
80	80.01	BED		10
80.7	80.71	FLT	M	12

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DataSet: **ORO_GF**

Hole ID: **ORO13-09**

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	86.45	87.24	Sandstone	Quartzite - nonspecific	Light grey fine- grained quartzite. Upper contact ~25° tca. Stockwork quartz + ankerite±pyrite veins <5mm, 2 sets meet orthogonally at ~60° tca. Py ~1%

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	86.45	87.24	Py	1	VEN										Stockwork quartz + ankerite±pyrite veins <5mm, 2 sets meet orthogonally at ~60° tca. Py ~1%

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	86.45	87.24	VQtz	±py±carb	40										Stockwork quartz + ankerite±pyrite veins <5mm, 2 sets meet orthogonally at ~60° tca.

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	87.24	88.75	Black Shale	undifferentiated shale	Laminated black shale (ShU) Laminated (10 - 25° tca) shale and minor quartzite layers. Faulted upper and lower contacts ~30°tca. Graphite coated fracture planes. Trace disseminated pyrite

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	87.24	88.75	Py	0.25	DIS										Trace disseminated pyrite

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	87.24	88.75	NoVeins	n/an/a											

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	87.24	87.26	FLT	M	12

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	88.75	91.3	Sandstone	Quartzite - nonspecific	Light grey fine- grained quartzite. Upper contact ~25° tca. Stockwork quartz + ankerite±pyrite veins <5mm, 2 sets meet orthogonally at ~60° tca. Single vein ~5cm thick oriented 35° tca. Rare weakly disseminated pyrite.

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DataSet: **ORO_GF**

Hole ID: **ORO13-09**

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
88.75	91.3	Py	0.5	DIS										Stockwork quartz + ankerite±pyrite veins <5mm, 2 sets meet orthogonally at ~60° tca. Single vein ~5cm thick oriented 35° tca. Rare weakly disseminated pyrite. Py ~0.5%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
88.75	91.3	VQtz	±carb±py	30										Stockwork quartz + ankerite±pyrite veins <5mm, 2 sets meet orthogonally at ~60° tca. Single vein ~5cm thick oriented 35° tca.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
88.75	88.76	FLT	M	25

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	91.3	124.7	Black Shale	undifferentiated shale	Lam black mst w/ fold+flt'd <2cm qzt intrbeds ~10 -50° tca. Polished graphite andgrn-blue clay min coat fracs. Dis py w/in qzt bands, and as discrete horizons in mst. Rare nod Py.

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DataSet: ORO_GF

Hole ID: ORO13-09

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
91.3	124.7	Py	0.5	DIS										Disseminated pyrite occurs within folded quartzite bands, and as discrete horizons within mudstone. Rare nodular pyrite. Py ~0.5%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
91.3	124.7	VQtz	n/a	0.1										

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
101.35	101.5	FLT	M	30
104	104.01	BED		25
108.4	108.41			10
108.41	108.42	FOL		50
114.44	114.45	BED		15
114.45	114.46	FOL		40
116.5	116.51	BED		10
121.9	122	FLT	M	
122.8	122.83			25
123	123.05			30
124.6	125	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	124.7	126.3	Sandstone	Quartzite - nonspecific	Light grey, thinly bedded to massive quartzite and <12cm interbeds black shale. Stockwork quartz + ankerite±pyrite veins <5mm, range from 10 – 40° tca. Abundant disseminated euhedral pyrite. Py ~3%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
124.7	126.3	Py	3	DIS										Stockwork quartz + ankerite±pyrite veins <5mm, range from 10 – 40° tca. Abundant disseminated euhedral pyrite. Py ~3%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
124.7	126.3	VQtz	±py±carb	35										Stockwork quartz + ankerite±pyrite veins <5mm, range from 10 – 40° tca.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

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DataSet: ORO_GF

Hole ID: ORO13-09

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	126.3	131	Black Shale	undifferentiated shale	Thinly bedded black shale. Bedding ~ 40° tca. Rare quartz veins <3mm, ~50° tca. Graphite and clay coat fracture planes. Rare disseminated pyrite along discrete horizons. Py ~0.5%

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	126.3	131	VQtz	n/a											Rare quartz veins <3mm, ~50° tca.

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	131	131.82	Sandstone	Quartzite - nonspecific	Massive to bedded light grey quartzite. Single <5cm shale interbed oriented ~50° tca. Stockwork quartz±ankerite veins <3mm, dominantly oriented ~35° tca.Trace disseminated pyrite.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	126.3	131.82	Py	0.5	DIS										Rare disseminated pyrite along discrete horizons. Py ~0.5%

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	131	131.82	VQtz	±carb	20										Stockwork quartz±ankerite veins <3mm, dominantly oriented ~35° tca.

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

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DataSet: **ORO_GF**

Hole ID: **ORO13-09**

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
126.3	131.82	Py	0.5	DIS										Rare disseminated pyrite along discrete horizons. Py ~0.5%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
131	131.82	VQtz	±carb	20										Stockwork quartz±ankerite veins <3mm, dominantly oriented ~35° tca.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	139.59	145.69	Sandstone	Quartzite - nonspecific	Massive light grey fine to medium grained quartzite. Common quartz±ankerite veins <2mm, ~50°tca, ~30/m, locally vuggy with euhedral crystals. Fine grained disseminated pyrite throughout. Py ~2%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
139.59	145.69	Py	2	DIS										Fine grained disseminated pyrite throughout. Py ~2%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
139.59	145.69	VQtz	±carb	20										Common quartz±ankerite veins <2mm, ~50°tca, ~30/m, locally vuggy with euhedral crystals

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	145.69	150.21	Black Shale	undifferentiated shale	Massive black shale. Common faults and gouge. Local faulted quartzite interbeds. Rare quartz±ankerite veins, 20 – 50° tca. Abundant disseminated pyrite; pyrite locally coats fracture planes. Py ~ 4%

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DataSet: **ORO_GF**

Hole ID: **ORO13-09**

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
145.69	150.21	Py	4	DIS										Abundant disseminated pyrite; pyrite locally coats fracture planes. Py ~ 4%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
145.69	150.21	VQtz	±carb	0.5										Rare quartz±ankerite veins, 20 – 50° tca.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
146.25	147.67	RUB	M	
149.85	149.9	FLT		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	150.21	152.1	Sandstone	Quartzite - nonspecific	Light grey –brown mass fine grained quartzite. Abundant disseminated pyrite strongest at top of interval, decr down over ~40cm from contact with shale. Common qtz±py±minor ank vns, <1mm, 10-50° tca, 35/m.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
150.21	152.1	Py	10	REPL										Abundant disseminated pyrite strongest at top of interval, decreasing downwards over ~40cm from contact with shale. Common quartz±pyrite±minor ankerite veins, <1mm, 10-50° tca, 35/m. Py ~10%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
150.21	152.1	VQtz	±py±carb	35										Common quartz±pyrite±minor ankerite veins, <1mm, 10-50° tca, 35/m.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	152.1	175.26	Black Shale	Siliceous shale	Thn bed- mass siliceous shale w/ semi-concoidal frac. Comn qzt intrbd <3cm are multiply folded. Frac planes coated in blue-green chalky clay. Dis py horiz, local nodules. Rare qtz vns.

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DataSet: **ORO_GF**

Hole ID: **ORO13-09**

Alteration:

From (m)	**To (m)**	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	**To (m)**	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
152.1	175.26	Py	3	DIS										Disseminated pyrite along local discrete horizons, local pyrite nodules and circular concretions. Py~ 3%

Veining:

From (m)	**To (m)**	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
152.1	175.26	VQtz	±carb	1										

Structure:

From (m)	**To (m)**	Type	Intensity	CA Angle
165.3	165.33	FOL		40
170.5	170.53	SSF		
170.7	170.73			

GeoSpark Logger Print Logs ~ Geotechnical

DataSet: ORO_GF

Hole ID: ORO13-09

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
7.61	8.53	0.92	0.68	73.9131	0	0	mode	100	100	STR		
8.53	9.14	0.61	0.38	62.2950	0	0	mode	100	100	STR		
9.14	10.06	0.92	0.43	46.7391	0	0	mode	100	100	STR		
10.06	11.57	1.51	0.33	21.8543	0	0	mode	100	100	STR		
11.57	13.09	1.52	0.3	19.7368	0	0	mode	100	100	STR		
13.09	13.7	0.61	0	0	0	0						
13.7	14.63	0.93	0.62	66.6666	0	0	mode	100	100	STR		
14.63	16.14	1.51	0.69	45.6954	0	0	sof	100	100	SFT		
16.14	17.68	1.54	0.54	35.0649	0	0	mode	100	100	STR		
17.68	19.2	1.52	1.39	91.4473	0.11	7.24	mode	100	100	STR		
19.2	19.5	0.3	0.25	83.3336	0	0	una	100	100	STR		
19.5	21.03	1.53	1.53	100	0.15	9.8	una	100	100	STR		
21.03	22.25	1.22	0.72	59.0164	0	0	una	100	100	STR		
22.25	23.77	1.52	1.2	78.9474	0.13	8.55	una	100	100	STR		
23.77	25.3	1.53	1.05	68.6275	0.12	7.84	mode	100	100	STR		
25.3	25.91	0.61	0.67	109.836	0	0	mode	100	100	SFT		
25.91	27.43	1.52	1.09	71.7105	0.26	17.11	sli	100	100	STR		
27.43	28.35	0.92	0.77	83.6956	0	0	sli	100	100	STR		
28.35	29.87	1.52	1.42	93.4210	0.15	9.87	sli	100	100	STR		
29.87	31.39	1.52	1.38	90.7896	0.12	7.89	sli	100	100	STR		
31.39	32.3	0.91	0.65	71.4286	0	0	mode	100	100	STR		
32.3	33.22	0.92	0.35	38.0434	0	0	sli	75	75	STR		
33.22	34.44	1.22	0.95	77.8690	0.13	10.66	sli	50	50	STR		
34.44	35.96	1.52	1.48	97.3684	0.59	38.82	sof	100	100	SFT		gouge
35.96	37.49	1.53	1.31	85.6208	0.25	16.34	sof	100	100	SFT		gouge
37.49	39.01	1.52	1.05	69.0791	0.43	28.29	sof	100	100	SFT		gouge
39.01	40.53	1.52	0.5	32.8947	0	0	sof	100	100	SFT		gouge
40.53	41.14	0.61	0.66	108.197	0	0	mode	50	50	SFT		
41.14	42.36	1.22	0.34	27.8688	0	0	sof	100	100	SFT		gouge
42.36	43.58	1.22	0.95	77.8688	0.39	31.97	mode	20	20	STR		
43.58	45.11	1.53	1.43	93.4641	0.82	53.59	mode	24	24	STR		
45.11	46.63	1.52	1.33	87.5	0.73	48.03	sof	18	18	SFT		30cm gouge
46.63	48.15	1.52	1.4	92.1052	0.83	54.61	sli	40	40	SFT		
48.15	49.68	1.53	1.21	79.0850	0.28	18.3	sli	50	50	STR		
49.68	51.2	1.52	0.77	50.6579	0.14	9.21	sli	50	50	STR		
51.2	52.73	1.53	0.27	17.6471	0	0	sli	10	10	STR		unclear why the rec is so poor
52.73	54.25	1.52	0.85	55.9210	0.41	26.97	sli	25	25	STR		

Hole ID: **ORO13-09**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
54.25	55.77	1.52	0.82	53.9474	0.14	9.21	mode	100	100	SFT		
55.77	57.06	1.29	1.04	80.6201	0.57	44.19	sof	100	100	SFT		gouge
57.06	58.52	1.46	1.04	71.2329	0.53	36.3	sof	20	20	SFT		gouge
58.52	60.05	1.53	1.54	100.654	0.12	7.84	sof	25	25	SFT		gouge
60.05	60.66	0.61	0.38	62.2950	0.1	16.39	sof	10	10	SFT		fault
60.66	61.87	1.21	1.2	99.1736	0.19	15.7	sof	30	30	SFT		fault
61.87	63.4	1.53	1.49	97.3855	0.36	23.53	sof	100	100	SFT		fault
63.4	64.92	1.52	1.4	92.1055	0.27	17.76	sli	25	25	STR		
64.92	66.45	1.53	1.35	88.2354	0.11	7.19	sli	40	40	STR		
66.45	67.67	1.22	1.24	101.639	0.72	59.02	sli	17	17	STR		
67.67	67.97	0.3	0.22	73.3326	0.13	43.33	sof	9	9	STR		shale with 5cm gouge band
67.97	69.49	1.52	1.47	96.7107	1.27	83.55	sli	10	10	STR		
69.49	71.02	1.53	1.47	96.0785	0.73	47.71	sli	10	10	STR		
71.02	72.54	1.52	1.47	96.7103	0.73	48.03	sli	10	10	SFT		hard shale with 2 crumbly gouge bands
72.54	75.3	2.76	2.91	105.435	1.25	45.29	sli	25	25	STR		
75.3	75.59	0.29	0.15	51.7253	0.15	51.72	sli			STR		
75.59	77.11	1.52	1.45	95.3945	1.17	76.97	una	6	6	STR		
77.11	78.33	1.22	1.33	109.016	1.03	84.43	una	6	6	STR		
78.33	79.25	0.92	0.9	97.8263	0.69	75	una	8	8	STR		
79.25	80.77	1.52	1.25	82.2370	0.45	29.61	sli	15	15	STR		reduced to NQ
80.77	81.99	1.22	0.75	61.4754	0	0	sli	20	20	STR		
81.99	84.73	2.74	2.55	93.0655	1.87	68.25	sli	18	18	STR		
84.73	85.95	1.22	1.16	95.0825	0.38	31.15	sli	25	25	STR		
85.95	87.78	1.83	1.63	89.071	0.41	22.4	sli	25	25	STR		
87.78	89.92	2.14	1.93	90.1869	1.18	55.14	una	25	25	STR		
89.92	90.83	0.91	0.95	104.395	0.57	62.64	una	6	6	STR		
90.83	92.96	2.13	2.08	97.6527	1.04	48.83	una	12	12	STR		
92.96	95.71	2.75	2.4	87.2727	0.9	32.73	sli	14	14	STR		
95.71	97.84	2.13	1.9	89.202	0.41	19.25	sli	25	25	STR		
97.84	99.97	2.13	2.18	102.347	1.16	54.46	sli	12	12	STR		
99.97	102.41	2.44	2.35	96.3114	1.21	49.59	sli	21	21	STR		
102.41	105.46	3.05	2.95	96.7215	1.46	47.87	sli	20	20	STR		
105.46	108.51	3.05	2.84	93.1147	1.81	59.34	sli	13	13	STR		
108.51	111.86	3.35	3.14	93.7314	2.49	74.33	sli	8	8	STR		
111.86	113.39	1.53	1.41	92.1569	0.14	9.15	sli	35	35	STR		
113.39	115.21	1.82	1.52	83.5165	0.9	49.45	sli	15	15	STR		
115.21	118.26	3.05	3.07	100.656	2.14	70.16	sli	8	8	STR		
118.26	121.31	3.05	2.75	90.1641	1.54	50.49	sli	9	9	STR		
121.31	122.83	1.52	0.99	65.1314	0	0	mode	50	50	SFT		

Hole ID: **ORO13-09**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
122.83	125.27	2.44	2.04	83.6067	0.8	32.79	sli	50	50	STR		
125.27	127.4	2.13	1.85	86.8543	1.27	59.62	sli	11	11	STR		
127.4	129.84	2.44	2.38	97.5412	1.63	66.8	sli	20	20	STR		
129.84	132.89	3.05	2.85	93.4425	2.17	71.15	sli	2	2	STR		
132.89	134.11	1.22	0.75	61.4754	0.18	14.75	sli	25	25	STR		
134.11	136.55	2.44	2.24	91.8032	1.36	55.74	sli	25	25	STR		
136.55	139.59	3.04	2.57	84.5397	0.39	12.83	mode	50	50	STR		
139.59	140.97	1.38	1.42	102.898	1.06	76.81	una	10	10	STR		
140.97	142.64	1.67	1.39	83.2336	0.22	13.17	una	22	22	STR		
142.64	145.69	3.05	2.88	94.4261	1.85	60.66	una	12	12	STR		
145.69	147.67	1.98	1.27	64.1416	0	0	mode	100	100	SFT		
147.67	148.74	1.07	0.91	85.0462	0.24	22.43	sli	28	28	STR		
148.74	151.79	3.05	2.69	88.1971	1.55	50.82	sli	18	18	STR		
151.79	156.66	4.87	4.62	94.8663	1.58	32.44	sli	25	25	STR		
156.66	159.71	3.05	2.95	96.7212	2.48	81.31	una	3	3	STR		
159.71	162.45	2.74	2.97	108.395	1.58	57.66	una	24	24	STR		
162.45	163.98	1.53	1.48	96.7321	1.2	78.43	una	6	6	STR		
163.98	167.03	3.05	2.96	97.0491	2.02	66.23	una	8	8	STR		
167.03	169.77	2.74	2.54	92.7005	1.27	46.35	una	10	10	STR		
169.77	172.51	2.74	2.6	94.8909	0.33	12.04	una	25	25	STR		
172.51	175.26	2.75	2.5	90.9091	1.68	61.09	una	15	15	STR		

GeoSpark Logger Print Logs ~ Mag Susceptibility

DataSet: ORO_GF

Hole ID: ORO13-09

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
7.61	10.15	2.54	0.008	0.013	0.017	0.013	SI	LD	19/08/2013	
10.15	13.7	3.55	0.011	0.034	0.282	0.109	SI	LD	19/08/2013	
13.7	15	1.3	0.053	0.023	0	0.025	SI	LD	19/08/2013	
15	17	2	0.26	0.045	0.022	0.109	SI	LD	19/08/2013	
17	19	2	-0.003	0.032	0.022	0.017	SI	LD	19/08/2013	
19	21	2	0.165	0.269	0.316	0.25	SI	LD	19/08/2013	
21	23	2	0.033	0.209	0.326	0.189	SI	LD	19/08/2013	
23	25.3	2.3	0.044	0.047	0.192	0.094	SI	LD	19/08/2013	
25.3	27	1.7	0.067	0.241	0.41	0.239	SI	LD	19/08/2013	
27	29	2	0.19	0.045	0.117	0.117	SI	LD	19/08/2013	
29	31	2	0.008	0.049	0.003	0.02	SI	LD	19/08/2013	
31	33.22	2.22	2.11	0.023	0.987	1.04	SI	LD	19/08/2013	
33.22	34	0.78	0.122	0.161	0.513	0.265	SI	LD	19/08/2013	
34	34.87	0.87	0.013	0.116	0.022	0.05	SI	LD	19/08/2013	
34.87	37	2.13	0.058	0.052	0.005	0.038	SI	LD	19/08/2013	
37	39	2	0.042	0.16	0.116	0.106	SI	LD	19/08/2013	
39	40.53	1.53	0.211	0.011	0.226	0.149	SI	LD	19/08/2013	
40.53	41.14	0.61	0.061	0.048	0.068	0.059	SI	LD	19/08/2013	
41.14	43	1.86	0.257	0.042	0.278	0.192	SI	LD	19/08/2013	
43	45	2	0.031	0.149	0.04	0.073	SI	LD	19/08/2013	
45	47	2	0.018	0.061	0.182	0.087	SI	LD	19/08/2013	
47	49	2	0.009	0.024	0.055	0.029	SI	LD	19/08/2013	
49	51	2	0.017	0.055	0.026	0.033	SI	LD	19/08/2013	
51	53	2	0.109	0.141	0.017	0.089	SI	LD	19/08/2013	
53	55	2	2.36	0.014	0.144	0.839	SI	LD	19/08/2013	
55	56.39	1.39	0.007	0.014	0.018	0.013	SI	LD	19/08/2013	
56.39	58	1.61	0	0.038	0.026	0.021	SI	LD	19/08/2013	
58	60	2	0.027	0.014	0.032	0.024	SI	LD	19/08/2013	
60	62	2	0.001	0.012	0.003	0.005	SI	LD	20/08/2013	
62	63.28	1.28	0	0.644	0.044	0.229	SI	LD	20/08/2013	
63.28	65	1.72	0.023	0.045	0.02	0.029	SI	LD	20/08/2013	
65	67	2	0.032	0.07	0.008	0.037	SI	LD	20/08/2013	
67	69	2	0.018	0.01	0.062	0.03	SI	LD	20/08/2013	
69	71	2	0.041	0.225	0.081	0.116	SI	LD	20/08/2013	
71	73	2	0.896	0.124	0.143	0.388	SI	LD	20/08/2013	
73	75	2	0.012	0.272	0.014	0.099	SI	LD	20/08/2013	
75	76.18	1.18	0.026	0.034	0.165	0.075	SI	LD	20/08/2013	

Hole ID: **ORO13-09**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
76.18	78	1.82	3.46	3.55	3.55	3.52	SI	LD	20/08/2013	
78	80	2	3.39	3.8	2.71	3.3	SI	LD	20/08/2013	
80	82	2	0.028	0.177	0.029	0.078	SI	LD	20/08/2013	
82	84	2	0.359	0.213	0.025	0.199	SI	LD	20/08/2013	
84	86.45	2.45	1.41	0.115	0.042	0.522	SI	LD	20/08/2013	
86.45	87.24	0.79	2.97	2.5	1.84	2.437	SI	LD	20/08/2013	
87.24	88.75	1.51	0.837	0.062	0.066	0.322	SI	LD	20/08/2013	
88.75	90	1.25	2.57	2.28	1.39	2.08	SI	LD	20/08/2013	
90	91.3	1.3	3.18	2.52	2.22	2.64	SI	LD	20/08/2013	
91.3	93	1.7	0.458	0.186	0.039	0.228	SI	LD	20/08/2013	
93	95	2	0.072	0.33	0.056	0.153	SI	LD	20/08/2013	
95	97	2	0.118	0.031	0.058	0.069	SI	LD	20/08/2013	
97	99	2	0.07	0.141	0.062	0.091	SI	LD	20/08/2013	
99	101	2	0.163	0.061	0.04	0.088	SI	LD	20/08/2013	
101	103	2	0.054	0.131	1.39	0.525	SI	LD	20/08/2013	
103	105	2	0.072	0.105	0.04	0.072	SI	LD	20/08/2013	
105	107	2	0.073	0.062	0.049	0.061	SI	LD	20/08/2013	
107	109	2	0.114	0.075	0.064	0.084	SI	LD	20/08/2013	
109	111	2	0.431	0.416	0.068	0.305	SI	LD	20/08/2013	
111	113	2	0.14	0.034	0.074	0.083	SI	LD	20/08/2013	
113	115	2	0.127	0.748	0.183	0.353	SI	LD	20/08/2013	
115	117	2	3.6	0.288	3.71	2.533	SI	LD	20/08/2013	
117	119	2	0.114	0.052	0.276	0.147	SI	LD	20/08/2013	
119	121	2	0.421	1.07	1.97	1.154	SI	LD	20/08/2013	
121	123	2	0.053	0.948	0.284	0.428	SI	LD	20/08/2013	
123	124.7	1.7	0.336	2.64	0.164	1.047	SI	LD	20/08/2013	
124.7	126.3	1.6	2.39	2.47	2.35	2.403	SI	LD	20/08/2013	
126.3	128	1.7	0.006	0.965	0.269	0.413	SI	LD	20/08/2013	
128	130	2	0.099	0.058	0.042	0.066	SI	LD	20/08/2013	
130	132	2	0.489	0.434	0.049	0.324	SI	LD	20/08/2013	
132	134	2	0.029	0.024	0.026	0.026	SI	LD	20/08/2013	
134	136	2	0.034	0.017	1.58	0.544	SI	LD	20/08/2013	
136	138	2	0.203	0.378	0.021	0.201	SI	LD	20/08/2013	
138	139.59	1.59	0.02	0.584	0.706	0.437	SI	LD	20/08/2013	
139.59	141.5	1.91	0.117	0.244	3.91	1.424	SI	LD	20/08/2013	
141.5	143.5	2	1.65	1.22	0.403	1.091	SI	LD	20/08/2013	
143.5	145.69	2.19	1.87	2.84	0.052	1.587	SI	LD	20/08/2013	
145.69	148	2.31	0.426	0.014	0.02	0.153	SI	LD	20/08/2013	
148	150.21	2.21	0.11	0.028	0.167	0.102	SI	LD	20/08/2013	

GeoSpark Logger Print Logs ~ Mag Susceptibility

Hole ID: **ORO13-09**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
150.21	152.1	1.89	0.951	2.46	3.11	2.174	SI	LD	20/08/2013	
152.1	154	1.9	0.291	1.27	1.98	1.18	SI	LD	20/08/2013	
154	156	2	0.25	0.396	0.558	0.401	SI	LD	20/08/2013	
156	158	2	1.06	0.43	0.264	0.585	SI	LD	20/08/2013	
158	160	2	0.078	0.136	0.134	0.116	SI	LD	20/08/2013	
160	162	2	0.052	0.006	0.065	0.041	SI	LD	20/08/2013	
162	164	2	0.226	0.269	0.065	0.187	SI	LD	20/08/2013	
164	166	2	0.22	0.807	0.545	0.524	SI	LD	20/08/2013	
166	168	2	0.283	0.265	0.166	0.238	SI	LD	20/08/2013	
168	170	2	0.051	0.077	0.304	0.144	SI	LD	20/08/2013	
170	172	2	0.345	0.227	0.056	0.209	SI	LD	20/08/2013	
172	174	2	0.188	0.386	0.138	0.237	SI	LD	20/08/2013	
174	175.26	1.26	0.181	0.164	0.109	0.151	SI	LD	20/08/2013	

GeoSpark Logger Print Logs ~ DH Samples

DataSet: ORO_GF

Hole ID: ORO13-09

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
7.61	10.15	Q186903	HC	LD	☐	1.34m Blocky recovered core in this sample. 1.2m MISSING.
10.15	13.09	Q186904	HC	LD	☐	0.68 m of recovered rubbly core in this sample. 2.26m MISSING from interval. NO CORE FROM 13.09- 13.7
13.7	15	Q186905	HC	LD	☐	0.80m rubbly gougey recovered core inthis sample. 0.5m MISSING
15	17	Q186906	HC	LD	☐	1m blocky rubbly gougey core recovered in this sample. 1m MISSING
17	19	Q186907	HC	LD	☐	1.4m recovered core in this sample. 0.6m MISSING
19	21	Q186908	HC	LD	☐	
21	23	Q186909	HC	LD	☐	
23	25.3	Q186911	HC	LD	☐	
25.3	27	Q186912	HC	LD	☐	
27	29	Q186913	HC	LD	☐	
29	31	Q186914	HC	LD	☐	
31	33.22	Q186915	HC	LD	☐	1.3m recovered blocky, faulted core in this sample. 0.92m MISSING
33.22	34	Q186916	HC	LD	☐	.65m recovered blocky core in this sample. 0.13cm MISSING
34	34.87	Q186917	HC	LD	☐	
34.87	37	Q186918	HC	LD	☐	
37	39	Q186919	HC	LD	☐	
39	40.53	Q186921	HC	LD	☐	.53m faulted gougey core recovered in this sample. 1.13m MISSING
40.53	41.14	Q186922	HC	LD	☐	
41.14	43	Q186923	HC	LD	☑	0.77m blocky faulted recovered core in this sample. 1.09m MISSING
43	45	Q186925	HC	LD	☐	
45	47	Q186926	HC	LD	☑	
47	49	Q186927	HC	LD	☐	
49	51	Q186928	HC	LD	☐	1.1m blocky recovered core in this sample. 0.9m MISSING
51	53	Q186929	HC	LD	☐	0.7m blocky recovered core in this sample. 1.3m MISSING.
53	55	Q186931	HC	LD	☐	
55	56.39	Q186932	HC	LD	☐	
56.39	58	Q186933	HC	LD	☐	
58	60	Q186934	HC	LD	☐	
60	62	Q186935	HC	LD	☐	
62	63.28	Q186936	HC	LD	☐	
63.28	65	Q186937	HC	LD	☐	
65	67	Q186938	HC	LD	☐	
67	69	Q186939	HC	LD	☐	
69	71	Q186941	HC	LD	☐	
71	73	Q186942	HC	LD	☐	
73	75	Q186943	HC	LD	☐	

Hole ID: **ORO13-09**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
75	76.18	Q186944	HC	LD	☐	
76.18	78	Q186945	HC	LD	☐	
78	80	Q186946	HC	LD	☐	
80	82	Q186947	HC	LD	☐	
82	84	Q186948	HC	LD	☐	
84	86.45	Q186949	HC	LD	☐	
86.45	87.24	Q186951	HC	LD	☑	
87.24	88.75	Q186953	HC	LD	☐	
88.75	90	Q186954	HC	LD	☐	
90	91.3	Q186955	HC	LD	☑	
91.3	93	Q186956	HC	LD	☐	
93	95	Q186957	HC	LD	☐	
95	97	Q186958	HC	LD	☐	
97	99	Q186959	HC	LD	☐	
99	101	Q186961	HC	LD	☐	
101	103	Q186962	HC	LD	☑	
103	105	Q186963	HC	LD	☐	
105	107	Q186964	HC	LD	☐	
107	109	Q186965	HC	LD	☐	
109	111	Q186966	HC	LD	☐	
111	113	Q186967	HC	LD	☐	
113	115	Q186968	HC	LD	☐	
115	117	Q186969	HC	LD	☐	
117	119	Q186971	HC	LD	☐	
119	121	Q186972	HC	LD	☐	
121	123	Q186973	HC	LD	☐	
123	124.7	Q186974	HC	LD	☐	
124.7	126.3	Q186975	HC	LD	☐	
126.3	128	Q186976	HC	LD	☐	
128	130	Q186977	HC	LD	☐	
130	132	Q186978	HC	LD	☑	
132	134	Q186981	HC	LD	☐	
134	136	Q186982	HC	LD	☐	
136	138	Q186983	HC	LD	☐	
138	139.59	Q186984	HC	LD	☐	
139.59	141.5	Q186985	HC	LD	☐	
141.5	143.5	Q186986	HC	LD	☐	
143.5	145.69	Q186987	HC	LD	☐	
145.69	148	Q186988	HC	LD	☐	

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-09**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
148	150.21	Q186989	HC	LD	☐	
150.21	152.1	Q186991	HC	LD	☐	
152.1	154	Q186992	HC	LD	☐	
154	156	Q186993	HC	LD	☐	
156	158	Q186994	HC	LD	☐	
158	160	Q186995	HC	LD	☐	
160	162	Q186996	HC	LD	☐	
162	164	Q186997	HC	LD	☐	
164	166	Q186998	HC	LD	☑	
166	168	Q186999	HC	LD	☐	
168	170	Q187001	HC	LD	☐	
170	172	Q187002	HC	LD	☐	
172	174	Q187003	HC	LD	☐	
174	175.26	Q187004	HC	LD	☐	

GeoSpark Logger Print Logs ~ Duplicate Samples

DataSet: ORO_GF

Hole ID: ORO13-09

From (m)	To (m)	Sample ID	Original Sample ID	QC Category	Comments
41.14	43	Q186924	Q186923	FD	
45	47	Ch:Q186926	Q186926	LABCHCK	
86.45	87.24	Q186952	Q186951	FD	
90	91.3	Pd:Q186955	Q186955	PREPCHK	
101	103	Ch:Q186962	Q186962	LABCHCK	
130	132	Q186979	Q186978	FD	
164	166	Ch:Q186998	Q186998	LABCHCK	

GeoSpark Logger Print Logs ~ Standards / Blanks

DataSet: ORO_GF

Hole ID: ORO13-09

Sample ID	Standard ID	Comments
Q186910	FB	
Q186920	CDN-GS-10D	
Q186930	FB	
Q186940	CDN-GS-P6	
Q186950	FB	
Q186960	CDN-GS-10D	
Q186970	FB	
Q186980	CDN-CM-25	
Q186990	FB	
Q187000	CDN-GS-P6	

Gold Fields Selwyn – Quicklog 2013

<table>
<tr><td>Hole no: ORO13-10
Logged By: Tim Stubley</td><td>Az: 180</td><td>Dip: -55</td><td>Target depth:
225</td><td colspan="2">EOH: 183.53 m</td></tr>
<tr><td>Start date: August 20, 2013</td><td>End date:
August 24, 2013</td><td>Pad:
ORO13-L</td><td>E:
406500</td><td>N:
7022492</td><td>Elevation:
1668 m</td></tr>
<tr><td colspan="3">Target: Test area 8 – high grade Au-geochemical polygon. Specifically targets the highest Au in soil sample in this area (230 ppb)
Geology – targets package of calcareous siltstone and shale with limestone interbeds, and shale with thin limestone beds and barite.</td><td colspan="3">Target explained?
The targeted limestone is thinner than expected, and shale not particularly calcareous. Framboidal pyrite growth in siliceous shales below 138 m may reflect a secondary pyrite phase.</td></tr>
<tr><td colspan="6">Summary:
Location: ORO13-10 is located at the Blue Steel area, ~2.4 km NE of ORO13-09
Lithology: Overburden to 7.32 m, followed by bioturbated, massive - to - thinly bedded chert to 74.07 m (Interval of no core 54.86 – 57.93 m). Faulted chert and shale overlie a thickly bedded limestone unit between 84.12 and 87.28 m. Fault brecciated siltstone extends to 91 m, followed by massive to laminated siltstone, argillite and shale to 110.5 m, and a fault gouge zone to 117.04. Black shale with local chert interbeds extend to 138 m, followed by silty chert and siliceous shale to EOH at 183.53 m.
Alteration: Rusty red and yellow FeCarb and FeOx stains fracture surfaces in all units, and permeates downwards into the limestone from its faulted upper contact. Strong clay alteration is present in fault zones.
Mineralization: The upper chert beds and limestone are unmineralised, traces of disseminated and nodular pyrite begin to occur in the shale between 91 and 138 m. The siliceous shale below 138 m contains local framboidal pyrite aggregates, and thin discrete pyrite bedding horizons.
Interpretation/Comments:
The targeted limestone is thinner than expected, and shale not particularly calcareous. Framboidal pyrite growth in siliceous shales below 138 m may reflect a secondary pyrite phase.</td></tr>
</table>

Shift	**From**	**To**	**Comments**
Aug 20-22, 2013 0 – 119m	**0**	**7.32**	**Overburden**
	7.32	**54.86**	**Chert** Locally bedded and bioturbated grey to rusty red chert. Blocky, very poor core recovery over first 30 m. Undulating bedding ~30° tca defined by bioturbation. FeOx and FeCarb coats fracture planes and forms local <1mm crackle vein network. Fe alteration pervasive within slightly coarser interbeds. Stockwork carbonate veins <2mm, 50/m. Unmineralised
	54.86	**57.93**	**NO CORE: When attempting to reduce to NQ, HQ core barrel was spun off. Attempts re-connect reamed HQ+ NQ down 2.97m with no core recovery.**
	57.93	**74.07**	**Chert** Locally bedded and bioturbated grey to rusty red chert. Undulating bedding ~30° tca defined by bioturbation.

			FeOx and FeCarb coats fracture planes and forms local <1mm crackle vein network. Fe alteration pervasive within slightly coarser interbeds. Stockwork carbonate veins <2mm, 50/m. Unmineralised
	74.07	**84.12**	**Faulted chert and shale** Locally bedded and bioturbated grey to rusty red chert. Blocky, semi competent core upto 40cm, interspersed with abundant gouge and rubble. Shear planes ~20 – 50° tca. Unmineralised.
	84.12	**87.28**	**Limestone (LS)** Light grey massive to thickly bedded limestone. Moderate FeCarb alteration on fracture planes and pervasive FeCarb alteration down to ~30cm from faulted upper contact; otherwise fresh. Stockwork carbonate veins form breccia at lower faulted contact (~40°tca). Unmineralised
	87.28	**91**	**Faulted siltstone (Fault, shArSi)** Semi competent fault brecciated siltstone rubble and gouge. Bedding in competent sections ~ 60° tca. Strong pervasive FeCarb and FeOx alteration. Unmineralised.
	91	**110.50**	**Massive to bedded siltstone, argillite and shale (shArSi)** Thinly planar bedded to massive siltstone, minor shale forms interbeds <1cm, 40 – 50° tca that deform plastically along minor faults. Strong fracture controlled FeCarb alteration. Individual and local stockwork carbonate±FeCarb veins, <2mm, 20/m. Rare trace pyrite at vein selvages. **Py ~0.1%**
	110.50	**117.04**	**Faulted siltstone (Fault, shArSi)** Greenish black clay altered siltstone rubble and gouge. Rock is near-totally decomposed. Shear planes ~20 – 50°tca. Single pyrite aggregate <3cm. Strongly FeOx altered. **Py ~0.2%**
Aug 23, 2013 117.04 – 183.53 EOH	**117.04**	**138**	**Black shale (ShU)** Dark grey to black shale. Thin cherty interbeds <2cm ~15° tca. Common faulting; abundant rubble±gouge zones. FeOx±possible scorodite coats fracture planes at top of interval. Rare carbonate veins, <3mm parallel bedding planes ~15° tca. Rare nodular pyrite, possibly with secondary pyrite growth at margins. **Py ~0.5%**
	138	**183.53**	**Silty chert and shale (ShS)** Thinly bedded grey siliceous mudstone with <1mm to 4cm medium sand- sized granular interbeds oriented ~10 to 50° tca. Common faulting; abundant rubble±gouge zones. Rare carbonate veins <2mm ~50 – 75°tca, and rare quartz veins <1cm ~50°tca.

			Local nodular to framboidal pyrite <3cm, possibly with secondary pyrite growth at margins. Disseminated pyrite along discrete bedding horizons. **Py ~ 1.5% EOH**

GeoSpark Logger Print Logs ~ Collars

DataSet: **ORO_GF**

Depth (m)	Hole Type	Core Diamete	Grid ID	East	North	Elevation	Survey Method	Survey Date	Survey By	Date Started	Date Completed	Logged By	Prospect	Validated By
Hole: ORO13-10														
185.32 m	DD	HQ/NQ	UTM09N_NAD83	406500	7022492	1668	GPS	20/08/2013		20/08/2013	24/08/2013	TimS	Blue Steel	

GeoSpark Logger Print Logs ~ DH Surveys

DataSet: ORO_GF

Hole ID: ORO13-10

Depth (m)	Survey Method	Grid ID	Dip	Surv. Tool Azimuth	Magnetic Declination	Corrected Azimuth	Magnetics	Date Surveyed	Survey Instrument	Bad Reading	Comments
0	COLL	UTM09N_NAD83	-55	180	0	180		25/08/2013	CMP	☐	
72.85	EZ Shot	UTM09N_NAD83	-56.6	156.2	22.5	178.7		24/08/2013	EZ	☐	
124.36	EZ Shot	UTM09N_NAD83	-56.5	155.2	22.5	177.7		24/08/2013	EZ	☐	
185.32	EZ Shot	UTM09N_NAD83	-56.4	155.7	22.5	178.2		24/08/2013	EZ	☐	

Gold Fields Canada Signed: ______________

DataSet: ORO_GF

Hole ID: ORO13-10

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	0	7.32	Overburden	Overburden (OB)	

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	7.32	54.86	Siltstone - Cherty	Chert (SCCH)	Locally bedded (30° tca) and bioturb grey- rusty red chert. Poor recovery. FracCon FeOx andFeCarb alt; forms locl <1mm crackle vn ntwrk. Perv FeCarb alt w/in coarse interbeds. Stkwk Cal vns <2mm, 50/m. Unmineralised.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	7.32	54.86	UnMin	0											

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	7.32	54.86	Vcarb	±hem	3	Vcal		10							FeOx and FeCarb coats fracture planes and forms local <1mm crackle vein network. Stockwork carbonate veins <2mm, 50/m

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	7.32	32.1	RUB	VS	
	33.53	34.75			
	36.65	36.7	BED		30
	39.32	39.5	RUB	VS	
	44	44.52	FLTG		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	54.86	57.93	No Core/Chips recovery	No Core Recovered	NO CORE: When attempting to reduce to NQ, HQ core barrel was spun off. Attempts re-connect reamed HQ+ NQ down 2.97m with no core recovery.

Gold Fields Canada

Signed: ______________

DataSet: ORO_GF

Hole ID: ORO13-10

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	57.93	74.07	Siltstone - Cherty	Chert (SCCH)	Locally bedded (30° tca) and bioturb grey- rusty red chert. FracCon FeOx andFeCarb alt; forms locl <1mm crackle vn ntwrk. Perv FeCarb alt w/in coarse interbeds. Stkwk Cal vns <2mm, 50/m. Unmineralised.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
63.85	64	FLTG	VS	
71	71.32	RUB	S	
71.32	75.5			

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	74.07	84.12	Tectonic/Fault Rock - Undifferentiated	Fault (UT)	Blocky, semi competent rusty red bedded chert up to 40cm, interspersed with gouge+rubble < 1m. Shear planes ~20 – 50° tca. Unmineralised.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
57.93	84.12	Vcarb	±hem	3	Vcal		10							FeOx and FeCarb coats fracture planes and forms local <1mm crackle vein network. Stockwork carbonate veins <2mm, 50/m.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
75.5	75.95	FLTG	VS	
77.95	84.12			20

DataSet: ORO_GF

Hole ID: ORO13-10

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	84.12	87.28	Carbonate	Limestone - nonspecific	Lt grey mass-thck bed Ls. M FeCarb alt onfracplanesand perv FeCarbalt at upper cont; otherwise fresh. Stkwk carb vns form bx at lower flt cont (~40°tca). Unmineralised

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	84.12	87.28	Vcal	n/a	10										Stockwork carbonate veins form breccia at lower faulted contact (~40°tca).

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	87.28	91	Tectonic/Fault Rock - Undifferentiated	Fault (UT)	Semi competent fault brecciated siltstone rubble and gouge. Bedding in competent sections ~ 60° tca. Strong pervasive FeCarb and FeOx alteration. Unmineralised.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	57.93	91	UnMin	0											

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	87.28	91	Vcal	±hem	75										

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	88.09	88.1	BED		50
	90	91	FLTBX	S	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	91	110.5	Siltstone - Cherty	shale argillite and siltstone	Thinly planar bed to mass zst, minor shale interbeds <1cm, 40 – 50° tca that deform plastically along minor flts. S frac con FeCarb alt. Individual and local stkwk carbonate±FeCarb veins, <2mm, 20/m. Rare trace pyrite at vein selvages.

DataSet: **ORO_GF**

Hole ID: **ORO13-10**

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
91	110.5	Py	0.01	PAT										trace pyrite at vein selvage

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
91	110.5	Vcarb	±hem	2										Individual and local stockwork carbonate±FeCarb veins, <2mm, 20/m.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
97.5	97.51	BED	S	40

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	110.5	117.04	Fault Breccia	Fault gouge (UTG)	Greenish black, faulted, clay-altered siltstone rubble and gouge. Rock is near-totally decomposed. Shear planes ~20 – 50°tca. Single pyrite aggregate <3cm. Strongly FeOx altered. Py ~0.2%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
110.5	117.04	Py	0.2	AGG										Single pyrite aggregate <3cm.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
110.5	117.04	NoVeins	n/a											

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
112.12	117.04	FLTG	VS	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	117.04	138	Black Shale	undifferentiated shale	Dk grey-black shale w/ thin cherty interbeds<2cm ~ 15° tca. Common flts, gouge + rubble zones. FeOx + Poss Sco coats frac planes at top of interval. Rarecarb vns,<3mm, parallel bedding. Rare nod py,poss 2ndry Py growth at margins.

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Signed: ______________

DataSet: ORO_GF

Hole ID: ORO13-10

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
117.04	138	Py	0.5	NOD										Rare nodular pyrite, possibly with secondary pyrite growth at margins. Py ~0.5%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
117.04	138	Vcarb	n/a	0.1										Rare carbonate veins, <3mm parallel bedding planes ~15° tca.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
117.5	117.52	FLT		25
118.4	120	RUB	S	
120	120.1	FLTG	VS	
120.1	137.77	RUB	S	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	138	185.32	Siltstone - Cherty	Siliceous shale	Thn bed grey sil mdst w/ <1mm to 4cm mg sand intrbds ori'd ~10-50° tca. Comn flts,gouge + rubble zones. Rare carb vns ~50–75°tca, rare qtz veins <1cm ~50°tca.Local nod - framboidal py<3cm, poss 2ndry py growth at margins? Dis Py on discrete bed horizons.

Gold Fields Canada

Signed: ______________

DataSet: **ORO_GF**

Hole ID: **ORO13-10**

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
138	185.32	Py	1.5	NOD										Local nodular to framboidal pyrite <3cm, possibly with secondary pyrite growth at margins. Disseminated pyrite along discrete bedding horizons. Py ~ 1.5%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
138	185.32	Vcarb	n/a	0.1	VQtz									Rare carbonate veins <2mm ~50 – 75°tca, and rare quartz veins <1cm ~50°tca.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
145.39	146.3	FLTG	VS	20
146.6	146.7		S	
147.35	147.36	BED		5
150.8	151	FLTG	S	
152	152.7	RUB		
153.3	153.35	FLTG		
155.3	155.75	FLT		
156.8	157.58			
158	159.72	RUB		
163	163.98	FLT		
167.34	167.35		M	10
167.5	167.51	BED		25
169.32	169.55	FLT	M	
170.3	170.31	BED		15
173.43	174.25	FLT	M	20
177	180.14	FLTG	VS	
180.14	183.53	RUB		

DataSet: ORO_GF

Hole ID: ORO13-10

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
7.32	8.84	1.52	0.2	13.1579	0	0	non	100	100	NA		
8.84	11.89	3.05	0.5	16.3934	0	0	non	100	100	NA		
11.89	13.41	1.52	0.31	20.3947	0	0	non	100	100	NA		
13.41	14.63	1.22	0.27	22.1311	0	0	non	100	100	NA		
14.63	15.54	0.91	0.4	43.9561	0.1	10.99	non	100	100	NA		
15.54	16.46	0.92	0.14	15.2174	0	0	non	100	100	NA		
16.46	17.98	1.52	0.21	13.8158	0	0	non	100	100	NA		
17.98	19.51	1.53	0.54	35.2941	0.14	9.15	sli	100	100	STR		
19.51	21.03	1.52	0.24	15.7895	0	0	sli	100	100	NA		
21.03	22.56	1.53	0.24	15.6863	0	0	sli	100	100	NA		
22.56	24.08	1.52	0.6	39.4737	0.1	6.58	sli	100	100	STR		
24.08	25.6	1.52	0.3	19.7368	0	0	sli	100	100	NA		
25.6	27.13	1.53	0.35	22.8758	0	0	sli	100	100	NA		
27.13	28.65	1.52	0.3	19.7368	0	0	non	100	100	NA		
28.65	30.18	1.53	0.18	11.7647	0	0	non	100	100	NA		
30.18	31.7	1.52	0.44	28.9474	0	0	non	100	100	NA		
31.7	32	0.3	0.18	60.0002	0	0	sli	100	100	NA		
32	33.53	1.53	0.7	45.7517	0.37	24.18	sli	100	100	STR		
33.53	34.75	1.22	0.43	35.2459	0	0	sli	100	100	STR		
34.75	35.36	0.61	0.3	49.1803	0	0	sli	100	100	STR		
35.36	36.58	1.22	0.7	57.377	0.49	40.16	sli	15	15	STR		
36.58	37.8	1.22	0.69	56.5575	0	0	sli	25	25	STR		
37.8	38.71	0.91	0.65	71.4286	0	0	sli	25	25	STR		
38.71	39.32	0.61	0.6	98.3606	0.1	16.39	sli	23	23	STR		
39.32	40.84	1.52	1.34	88.1579	0.33	21.71	sli	40	40	STR		
40.84	42.06	1.22	1.04	85.2458	0.11	9.02	sli	28	28	STR		
42.06	42.67	0.61	0.1	16.3935	0	0	non	100	100	NA		
42.67	45.42	2.75	0.82	29.8182	0	0	sli	100	100	NA		
45.42	46.94	1.52	0.2	13.1579	0	0	non	100	100	NA		
46.94	48.46	1.52	0.35	23.0263	0	0	non	100	100	NA		
48.46	49.99	1.53	0.27	17.6470	0	0	sli	100	100	NA		
49.99	50.6	0.61	0.56	91.8038	0.14	22.95	sli	30	30	STR		
50.6	51.52	0.92	0.4	43.4782	0.22	23.91	sli	50	50	STR		
51.52	52.18	0.66	0.35	53.0303	0.11	16.67	sli	15	15	STR		
52.18	53.04	0.86	0.61	70.9302	0.19	22.09	sli	35	35	STR		
53.04	53.95	0.91	0.73	80.2198	0	0	sli	22	22	STR		
53.95	54.86	0.91	0.4	43.9561	0.13	14.29	sli	100	100	STR		

Hole ID: **ORO13-10**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
54.86	56.69	1.83	0.1	5.46449	0	0	non	100	100	STR		
56.69	57.93	1.24	0	0	0	0	non	0	0	NA		
57.93	59.71	1.78	0.83	46.6293	0	0	sli	25	25	STR		
59.71	62.48	2.77	0.72	25.9928	0	0	sli	25	25	STR		
62.48	63.7	1.22	0.99	81.1475	0.67	54.92	sli	10	10	STR		
63.7	65.84	2.14	0.7	32.7104	0	0	sli	30	30	STR		
65.84	68.28	2.44	1.53	62.7049	1.02	41.8	sli	25	25	STR		
68.28	69.8	1.52	1.2	78.9472	0.48	31.58	sli	20	20	STR		
69.8	71.32	1.52	1.1	72.3686	0.42	27.63	sli	60	60	STR		
71.32	72.85	1.53	0.7	45.7517	0	0	sli	100	100	STR		
72.85	73.76	0.91	0.38	41.7581	0	0	sli	18	18	STR		
73.76	74.07	0.31	0.24	77.42	0	0	sli	20	20	STR		
74.07	75.9	1.83	1.25	68.306	0.12	6.56	mode	25	25	SFT		
75.9	78.08	2.18	1.55	71.1009	0.47	21.56	mode	25	25	SFT		
78.08	78.94	0.86	0.14	16.2791	0	0	sli	15	15	SFT		
78.94	79.86	0.92	0.32	34.7827	0	0	mode	25	25	SFT		
79.86	81.99	2.13	1.54	72.3006	0	0	mode	25	25	SFT		
81.99	84.12	2.13	1.46	68.5445	0	0	mode	25	25	SFT		
84.12	85.04	0.92	0.53	57.6088	0.12	13.04	sli	15	15	STR		
85.04	86.87	1.83	1.83	99.9999	0.97	53.01	una	18	18	STR		
86.87	88.09	1.22	1.01	82.7873	0.44	36.07	sof	10	10	SFT		soft gouge sections
88.09	89.61	1.52	1.5	98.6839	0.24	15.79	mode	40	40	SFT		
89.61	91.14	1.53	1	65.3595	0.68	44.44	sli	10	10	SFT		narrow gouge
91.14	94.18	3.04	2.95	97.0394	2.39	78.62	sli	30	30	STR		
94.18	97.23	3.05	2.92	95.7376	2.46	80.66	sli	23	23	STR		
97.23	100.28	3.05	2.93	96.0657	2.24	73.44	sli	20	20	STR		
100.28	103.33	3.05	3.04	99.6720	2.62	85.9	sli	34	34	STR		
103.33	105.46	2.13	1.88	88.2630	0.99	46.48	sli	37	37	STR		
105.46	106.38	0.92	0.85	92.3915	0.52	56.52	sli	8	8	STR		
106.38	109.42	3.04	2.85	93.75	1.74	57.24	sli	70	70	STR		
109.42	111.86	2.44	1.65	67.6229	0.88	36.07	mode	35	35	SFT		
111.86	113.39	1.53	1.16	75.8171	0	0	sof	25	25	SFT		gouge
113.39	114.91	1.52	1.6	105.263	0.78	51.32	sof	100	100	SFT		soft rock amnd gouge
114.91	117.04	2.13	1.06	49.7653	0	0	sof	100	100	SFT		gouge
117.04	117.96	0.92	0.75	81.5219	0	0	sof	50	50	STR		
117.96	118.57	0.61	0.3	49.1803	0	0	sli	10	10	STR		
118.57	119.18	0.61	0.38	62.2950	0	0	sof	20	20	STR		
119.18	121.62	2.44	0.77	31.5574	0	0	sof	45	45	STR		
121.62	124.05	2.43	1.04	42.7984	0.42	17.28	sli	12	12	STR		

Hole ID: **ORO13-10**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
124.05	127.1	3.05	0.64	20.9836	0	0	sof	20	20	STR		
127.1	128.02	0.92	0.25	27.1737	0	0	sli	15	15	STR		
128.02	129.54	1.52	0.92	60.5268	0	0	sli	50	50	STR		
129.54	131.06	1.52	0.4	26.3157	0	0	sli	50	50	STR		
131.06	131.67	0.61	0.4	65.5737	0	0	sli	40	40	STR		
131.67	132.59	0.92	0.5	54.3479	0	0	sof	30	30	STR		
132.59	133.81	1.22	0.54	44.2623	0	0	sli	100	100	STR		
133.81	134.72	0.91	0.73	80.2195	0.1	10.99	sof	65	65	STR		
134.72	136.55	1.83	0.55	30.0546	0	0	sof	100	100	SFT		
136.55	137.77	1.22	0.7	57.377	0	0	mode	30	30	STR		
137.77	139.9	2.13	1.95	91.5497	1.33	62.44	sli	15	15	STR		
139.9	142.04	2.14	1.59	74.2991	0.39	18.22	sli	12	12	STR		
142.04	142.95	0.91	0.76	83.5161	0.19	20.88	sli	30	30	STR		
142.95	144.48	1.53	1.14	74.5099	0.1	6.54	sli	40	40	STR		
144.48	145.39	0.91	0.45	49.4504	0	0	sli	15	15	STR		
145.39	146.61	1.22	0.76	62.2950	0.15	12.3	sof	5	5	SFT		
146.61	147.52	0.91	0.78	85.7139	0	0	mode	16	16	STR		
147.52	148.74	1.22	1.12	91.8032	0.12	9.84	sli	25	25	VSTR		
148.74	149.96	1.22	0.9	73.7704	0.2	16.39	sli	20	20	VSTR		
149.96	151.18	1.22	1.03	84.4272	0	0	sli	35	35	VSTR		
151.18	152.7	1.52	1.15	75.6577	0.11	7.24	mode	30	30	VSTR		
152.7	155.14	2.44	1.76	72.1311	0.32	13.11	sli	40	40	VSTR		
155.14	155.75	0.61	0.7	114.754	0	0	sof	100	100	STR		
155.75	156.97	1.22	0.9	73.7704	0.22	18.03	sof	60	60	STR		
156.97	157.58	0.61	0.47	77.0491	0	0	sof	100	100	SFT		
157.58	158.5	0.92	0.76	82.6089	0	0	sof	100	100	SFT		
158.5	159.72	1.22	0.73	59.8360	0	0	sof	100	100	SFT		
159.72	160.32	0.6	0.45	74.9992	0	0	mode	50	50	STR		
160.32	161.54	1.22	0.99	81.1485	0.28	22.95	sli	30	30	STR		
161.54	163.98	2.44	1.6	65.5737	0.42	17.21	sof	40	40	STR		
163.98	164.9	0.92	0.7	76.0871	0	0	sli	50	50	STR		
164.9	165.81	0.91	0.43	47.2526	0.12	13.19	sli	25	25	STR		
165.81	167.34	1.53	0.38	24.8366	0	0	mode	30	30	STR		
167.34	168.86	1.52	1.1	72.3682	0.39	25.66	sli	25	25	STR		
168.86	169.47	0.61	0.51	83.6065	0.12	19.67	sli	20	20	STR		
169.47	170.69	1.22	0.81	66.3934	0.2	16.39	sli	25	25	STR		
170.69	173.43	2.74	2.24	81.7521	0.42	15.33	sli	40	40	STR		
173.43	173.74	0.31	0.25	80.6418	0	0	mode	40	40	STR		
173.74	174.65	0.91	0.73	80.2208	0	0	sli	40	40	STR		

Hole ID: **ORO13-10**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
174.65	175.56	0.91	0.72	79.1206	0.22	24.18	sli	14	14	STR		
175.56	178.31	2.75	1	36.3636	0.1	3.64	mode	45	45	STR		
178.31	179.22	0.91	0.35	38.4614	0	0	sof	50	50	VWK		
179.22	180.14	0.92	0.32	34.7827	0	0	mode	40	40	VWK		
180.14	180.75	0.61	0.66	108.197	0.13	21.31	mode	50	50	VWK		
180.75	182.58	1.83	1.08	59.0163	0.11	6.01	sli	50	50	STR		
182.58	183.49	0.91	0.5	54.9448	0	0	sli	25	25	STR		
183.49	184.4	0.91	0.52	57.1436	0	0	sli	30	30	STR		
184.4	185.32	0.92	0.35	38.0429	0	0	sli	15	15	STR		

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From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
7.32	8.84	1.52	0.039	0.017	0.319	0.125	SI	LD	23/08/2013	
8.84	11.89	3.05	0.027	0.016	0.438	0.16	SI	LD	23/08/2013	
11.89	13.41	1.52	0.004	0.08	0.084	0.056	SI	LD	23/08/2013	
13.41	14.62	1.21	0.037	0.174	0.144	0.118	SI	LD	23/08/2013	
14.62	15.54	0.92	0.049	0.073	0.051	0.058	SI	LD	23/08/2013	
15.54	16.46	0.92	0.13	0.513	0.132	0.258	SI	LD	23/08/2013	
16.46	17.98	1.52	0.059	0.029	0.057	0.048	SI	LD	23/08/2013	
17.98	19.51	1.53	0.016	0.054	0.018	0.029	SI	LD	23/08/2013	
19.51	21.03	1.52	0.002	0.025	0.031	0.019	SI	LD	23/08/2013	
21.03	22.56	1.53	0.024	0.006	0.043	0.024	SI	LD	23/08/2013	
22.56	24.08	1.52	0.119	0.04	0.037	0.065	SI	LD	23/08/2013	
24.08	25.6	1.52	0.256	0.044	0.339	0.213	SI	LD	23/08/2013	
25.6	27.13	1.53	0.03	0.046	0.033	0.036	SI	LD	23/08/2013	
27.13	28.65	1.52	0.138	0.033	0.043	0.071	SI	LD	23/08/2013	
28.65	30.18	1.53	0.448	0.215	0.025	0.229	SI	LD	23/08/2013	
30.18	31.7	1.52	0.359	0.226	0.036	0.207	SI	LD	23/08/2013	
31.7	32	0.3	0.334	0.05	0.06	0.148	SI	LD	23/08/2013	
32	33.53	1.53	0.04	0.639	0.264	0.314	SI	LD	23/08/2013	
33.53	34.75	1.22	0.788	0.87	0.596	0.751	SI	LD	23/08/2013	
34.75	35.36	0.61	0.372	0.21	0.054	0.212	SI	LD	23/08/2013	
35.36	36.58	1.22	0.446	3.25	0.225	1.307	SI	LD	23/08/2013	
36.58	37.8	1.22	0.067	0.028	0.16	0.085	SI	LD	23/08/2013	
37.8	38.71	0.91	0.326	0.197	0.365	0.296	SI	LD	23/08/2013	
38.71	39.32	0.61	0.272	0.159	0.062	0.164	SI	LD	23/08/2013	
39.32	40.84	1.52	0.17	0.04	0.013	0.074	SI	LD	23/08/2013	
40.84	42.06	1.22	0.028	0.158	0.046	0.077	SI	LD	23/08/2013	
42.06	42.67	0.61	0.474	0.667	0.667	0.603	SI	LD	23/08/2013	
42.67	45.42	2.75	0.031	0.284	0.17	0.162	SI	LD	23/08/2013	
45.42	46.94	1.52	0.007	0.02	0.482	0.17	SI	LD	23/08/2013	
46.94	48.46	1.52	0.027	0.063	0.387	0.159	SI	LD	23/08/2013	
48.46	49.99	1.53	0.196	1.91	0.017	0.708	SI	LD	23/08/2013	
49.99	50.6	0.61	0.077	0.038	0.386	0.167	SI	LD	23/08/2013	
50.6	51.52	0.92	0.23	1.28	0.022	0.511	SI	LD	23/08/2013	
51.52	52.18	0.66	0.202	0.191	1.12	0.504	SI	LD	23/08/2013	
52.18	53.04	0.86	0.06	0.066	0.027	0.051	SI	LD	23/08/2013	
53.04	53.95	0.91	0.437	0.065	0.016	0.173	SI	LD	23/08/2013	
53.95	54.86	0.91	0.052	0.818	0.055	0.308	SI	LD	23/08/2013	

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Hole ID: **ORO13-10**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
57.93	59.71	1.78	0.116	0.027	0.15	0.098	SI	LD	23/08/2013	
59.71	62.48	2.77	0.025	0.03	0.597	0.217	SI	LD	23/08/2013	
62.48	63.7	1.22	0.04	0.603	0.514	0.386	SI	LD	23/08/2013	
63.7	65.84	2.14	0.054	0.049	0.358	0.154	SI	LD	23/08/2013	
65.84	68.28	2.44	0.051	0.044	0.018	0.038	SI	LD	23/08/2013	
68.28	69.8	1.52	0.043	0.008	0.369	0.14	SI	LD	23/08/2013	
69.8	71.32	1.52	0.175	0.086	0.036	0.099	SI	LD	23/08/2013	
71.32	72.85	1.53	0.031	0.636	0.621	0.429	SI	LD	23/08/2013	
72.85	73.76	0.91	0.017	0.418	0.604	0.346	SI	LD	23/08/2013	
73.76	74.07	0.31	0.003	0.012	0.73	0.248	SI	LD	23/08/2013	
74.07	75.9	1.83	0.018	0.021	0.287	0.109	SI	LD	23/08/2013	
75.9	78.08	2.18	0.027	0.012	0.022	0.02	SI	LD	23/08/2013	
78.08	78.94	0.86	0.019	0.01	0.43	0.153	SI	LD	23/08/2013	
78.94	79.86	0.92	0.019	0.022	0	0.014	SI	LD	23/08/2013	
79.86	81.99	2.13	0.014	0.006	0.066	0.029	SI	LD	23/08/2013	
81.99	84.12	2.13	0.03	0.041	0.018	0.03	SI	LD	23/08/2013	
84.12	85.7	1.58	0.085	0.016	0.02	0.04	SI	LD	23/08/2013	
85.7	87.28	1.58	2.39	0.872	0.028	1.097	SI	LD	23/08/2013	
87.28	89	1.72	0.045	0.325	0.068	0.146	SI	LD	23/08/2013	
89	91	2	0.061	0.671	0.181	0.304	SI	LD	23/08/2013	
91	93	2	0.531	0.175	0.173	0.293	SI	LD	23/08/2013	
93	95	2	0.133	1.08	2.84	1.351	SI	LD	23/08/2013	
95	97	2	0.246	0.682	0.27	0.399	SI	LD	23/08/2013	
97	99	2	0.303	0.15	0.424	0.292	SI	LD	23/08/2013	
99	101	2	0.182	0.336	0.299	0.272	SI	LD	23/08/2013	
101	103	2	0.307	0.286	0.883	0.492	SI	LD	23/08/2013	
103	105	2	0.454	1.24	2.91	1.535	SI	LD	23/08/2013	
105	107	2	0.133	0.713	2.1	0.982	SI	LD	23/08/2013	
107	109	2	1.43	0.09	1.66	1.06	SI	LD	23/08/2013	
109	110.5	1.5	0.331	2.57	0.85	1.25	SI	LD	23/08/2013	
110.5	112.12	1.62	0.057	1.07	0.551	0.559	SI	LD	23/08/2013	
112.12	113.39	1.27	5.89	0.327	0.042	2.086	SI	LD	23/08/2013	
113.39	114.91	1.52	0.048	1.83	0.067	0.648	SI	LD	23/08/2013	
114.91	117.04	2.13	0.034	0.151	0.057	0.081	SI	LD	23/08/2013	
117.04	117.96	0.92	0.151	0.451	0.015	0.206	SI	RC	24/08/2013	
117.96	118.57	0.61	0.631	0.096	0.172	0.3	SI	RC	24/08/2013	
118.57	119.18	0.61	0.16	0.159	0.171	0.163	SI	RC	24/08/2013	
119.18	121.62	2.44	0.209	0.247	0.184	0.213	SI	RC	24/08/2013	
121.62	124.05	2.43	0.196	0.177	0.207	0.193	SI	RC		

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From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
124.05	127.1	3.05	0.194	0.142	0.137	0.158	SI	RC		
127.1	127.71	0.61	0.171	0.154	0.165	0.163	SI	RC		
127.71	128.02	0.31	0.182	0.132	0.145	0.153	SI	RC		
128.02	129.54	1.52	0.143	0.243	0.188	0.191	SI	RC		
129.54	130.76	1.22	0.119	0.116	0.124	0.12	SI	RC		
130.76	131.06	0.3	0.211	0.217	0.2	0.209	SI	RC		
131.06	131.67	0.61	0.161	0.136	0.181	0.159	SI	RC		
131.67	132.59	0.92	0.164	0.203	0.166	0.178	SI	RC		
132.59	133.81	1.22	0.367	0.161	0.163	0.23	SI	RC		
133.81	134.72	0.91	0.153	0.163	0.152	0.156	SI	RC		
134.72	136.55	1.83	0.125	0.151	0.154	0.143	SI	RC		
136.55	137.77	1.22	0.127	0.188	0.167	0.161	SI	RC		
137.77	139.9	2.13	0.165	0.188	0.169	0.174	SI	RC		
139.9	142.04	2.14	0.199	0.169	0.014	0.127	SI	RC		
142.04	142.95	0.91	0.185	0.014	0.015	0.071	SI	RC		
142.95	144.48	1.53	0.148	0.139	0.168	0.152	SI	RC		
144.48	145.39	0.91	0.128	0.165	0.617	0.303	SI	RC		
145.39	146.61	1.22	0.243	0.189	0.249	0.227	SI	RC		
146.61	147.52	0.91	0.252	0.314	0.317	0.294	SI	RC		
147.52	148.74	1.22	0.242	0.319	0.172	0.244	SI	RC		
148.74	149.96	1.22	0.112	0.159	0.035	0.102	SI	RC		
149.96	151.18	1.22	0.551	0.334	0.232	0.372	SI	RC		
151.18	152.7	1.52	0.272	0.62	0.198	0.363	SI	RC		
152.7	155.14	2.44	0.177	0.301	0.182	0.22	SI	RC		
155.14	155.75	0.61	0.185	0.268	0.221	0.225	SI	RC		
155.75	156.97	1.22	0.227	0.152	0.256	0.212	SI	RC		
156.97	157.58	0.61	0.248	0.235	0.244	0.242	SI	RC		
157.58	158.5	0.92	0.205	0.157	0.232	0.198	SI	RC		
158.5	159.72	1.22	0.154	0.2009	0.172	0.176	SI	RC		
159.72	160.32	0.6	0.205	0.317	0.263	0.262	SI	RC		
160.32	161.54	1.22	0.164	0.249	0.239	0.217	SI	RC		
161.54	163.98	2.44	0.236	0.296	0.307	0.28	SI	RC		
163.98	164.9	0.92	0.164	0.198	0.136	0.166	SI	RC		
164.9	165.81	0.91	0.185	0.227	0.208	0.207	SI	RC		
165.81	167.34	1.53	0.294	0.325	0.191	0.27	SI	RC		
167.34	168.86	1.52	0.186	0.184	0.172	0.181	SI	RC		
168.86	169.47	0.61	0.161	0.25	0.362	0.258				
170.69	173.43	2.74	0.171	0.174	0.19	0.178	SI	RC		
173.43	173.74	0.31	0.118	0.183	0.161	0.154	SI	RC		

Hole ID: **ORO13-10**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
173.74	174.65	0.91	0.222	0.191	0.158	0.19	SI	RC		
174.65	175.56	0.91	0.304	0.288	0.309	0.3	SI	RC		
175.56	178.31	2.75	0.175	0.545	0.326	0.349	SI	RC		
178.31	179.22	0.91	0.221	0.29	0.111	0.207	SI	RC		bad data-only rubble here
179.22	180.14	0.92	0.013	0.014	0.097	0.041	SI	RC		bad data-only rubble here
180.14	180.75	0.61	0.165	0.152	0.135	0.151	SI	RC		
180.75	182.58	1.83	0.415	0.335	0.239	0.33	SI	RC		
182.58	183.49	0.91	0.249	0.253	0.204	0.235	SI	RC		
183.49	184.4	0.91	0.139	0.156	0.176	0.157	SI	RC		
184.4	185.32	0.92	0.405	0.195	0.157	0.252	SI	RC		eoh

GeoSpark Logger Print Logs ~ DH Samples

DataSet: ORO_GF

Hole ID: ORO13-10

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
7.32	8.84	Q187006	HC	TimS	☐	0.2m recovered
8.84	11.89	Q187007	HC	TimS	☐	0.5m recovered
11.89	13.41	Q187008	HC	TimS	☐	0.31m recovered
13.41	14.63	Q187009	HC	TimS	☐	0.27m recovered
14.63	15.54	Q187011	HC	TimS	☐	0.4m recovered
15.54	16.46	Q187012	HC	TimS	☐	0.14m recovered
16.46	17.98	Q187013	HC	TimS	☐	0.21m recovered
17.98	19.51	Q187014	HC	TimS	☐	0.54m recovered
19.51	21.03	Q187015	HC	TimS	☑	0.24m recovered
21.03	22.56	Q187016	HC	TimS	☐	0.24m recovered
22.56	24.08	Q187017	HC	TimS	☐	0.6m recovered
24.08	25.6	Q187018	HC	TimS	☐	0.3m recovered
25.6	27.14	Q187019	HC	TimS	☐	0.35m recovered
27.14	28.65	Q187021	HC	TimS	☐	0.3m recovered
28.65	30.18	Q187022	HC	TimS	☐	0.18m recovered
30.18	31.7	Q187023	HC	TimS	☐	0.44m recovered
31.7	32	Q187024	HC	TimS	☐	0.18m recovered
32	33.5	Q187025	HC	TimS	☐	0.7m recovered
33.5	34.75	Q187026	HC	TimS	☐	0.43m recovered
34.75	35.36	Q187027	HC	TimS	☐	0.3m recovered
35.36	36.58	Q187028	HC	TimS	☐	0.7 recovered
36.58	37.8	Q187029	HC	TimS	☐	0.69m recovered
37.8	38.71	Q187031	HC	TimS	☐	0.65m recovered
38.71	39.32	Q187032	HC	TimS	☑	
39.32	40.84	Q187034	HC	TimS	☐	
40.84	42.06	Q187035	HC	TimS	☑	
42.06	42.67	Q187036	HC	TimS	☐	0.1m recovered
42.67	45.42	Q187037	HC	TimS	☐	0.82m recovered
45.42	46.94	Q187038	HC	TimS	☐	0.2m recovered
46.94	48.46	Q187039	HC	TimS	☐	0.35m recovered
48.46	49.99	Q187041	HC	TimS	☐	0.27m recovery
49.99	50.6	Q187042	HC	TimS	☐	
50.6	51.52	Q187043	HC	TimS	☐	0.4m recovery
51.52	52.18	Q187044	HC	TimS	☐	0.35m recovery
52.18	53.04	Q187045	HC	TimS	☐	
53.04	53.95	Q187046	HC	TimS	☐	
53.95	54.86	Q187047	HC	TimS	☐	0.4m recovered

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-10**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
57.93	59.71	Q187048	HC	TimS	☐	0.83m recovered
59.71	62.48	Q187049	HC	TimS	☐	0.72m recovered
62.48	63.7	Q187051	HC	TimS	☐	
63.7	65.84	Q187052	HC	TimS	☐	0.7m recovered
65.84	68.28	Q187053	HC	TimS	☐	1.53m recovered
68.28	69.8	Q187054	HC	TimS	☐	
69.8	71.32	Q187055	HC	TimS	☑	
71.32	72.85	Q187056	HC	TimS	☐	0.7m recovered
72.85	73.76	Q187057	HC	TimS	☐	0.38m recovered
73.76	74.07	Q187058	HC	TimS	☑	
74.07	75.9	Q187059	HC	TimS	☐	
75.9	78.08	Q187061	HC	TimS	☑	
78.08	78.94	Q187063	HC	TimS	☐	0.14m recovered
78.94	79.86	Q187064	HC	TimS	☐	0.32m recovered
79.86	81.99	Q187065	HC	TimS	☐	
81.99	84.12	Q187066	HC	TimS	☐	
84.12	85.7	Q187067	HC	TimS	☐	
85.7	87.28	Q187068	HC	TimS	☐	
87.28	89	Q187069	HC	TimS	☐	
89	91	Q187071	HC	TimS	☐	
91	93	Q187072	HC	TimS	☐	
93	95	Q187073	HC	TimS	☐	
95	97	Q187074	HC	TimS	☐	
97	99	Q187075	HC	TimS	☐	
99	101	Q187076	HC	TimS	☐	
101	103	Q187077	HC	TimS	☐	
103	105	Q187078	HC	TimS	☐	
105	107	Q187079	HC	TimS	☐	
107	109	Q187081	HC	TimS	☐	
109	110.5	Q187082	HC	TimS	☐	
110.5	112.12	Q187083	HC	TimS	☐	
112.12	113.39	Q187084	HC	TimS	☐	
113.39	114.91	Q187085	HC	TimS	☐	
114.91	117.04	Q187086	HC	TimS	☑	1.06m recovered
117.04	119	Q187087	HC	TimS	☐	
119	121.62	Q187088	HC	TimS	☑	~0.85m recovered
121.62	124.05	Q187091	HC	TimS	☐	1.04m recovered
124.05	127.1	Q187092	HC	TimS	☐	0.64m recovered
127.1	128.02	Q187093	HC	TimS	☐	0.25m recovered

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-10**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
128.02	129.54	Q187094	HC	TimS	[ ]	0.92m recovered
129.54	131.06	Q187095	HC	TimS	[ ]	0.4m recovered
131.06	132.59	Q187096	HC	TimS	[ ]	0.4m recovered
132.59	134.72	Q187097	HC	TimS	[ ]	0.54m recovered
134.72	136.55	Q187098	HC	TimS	[ ]	0.55m recovered
136.55	138	Q187099	HC	TimS	[ ]	0.7m recovered
138	140	Q187101	HC	TimS	[ ]	
140	142	Q187102	HC	TimS	[ ]	
142	144	Q187103	HC	TimS	[ ]	
144	145.39	Q187104	HC	TimS	[ ]	
145.39	146.61	Q187105	HC	TimS	[ ]	0.76m recovered
146.61	147.52	Q187106	HC	TimS	[ ]	
147.52	148.74	Q187107	HC	TimS	[ ]	
148.74	149.96	Q187108	HC	TimS	[ ]	
149.96	151.18	Q187109	HC	TimS	[x]	
151.18	152.7	Q187111	HC	TimS	[x]	
152.7	155.14	Q187112	HC	TimS	[ ]	
155.14	156.97	Q187113	HC	TimS	[ ]	
156.97	158.5	Q187114	HC	TimS	[ ]	
158.5	160.32	Q187115	HC	TimS	[ ]	
160.32	161.54	Q187116	HC	TimS	[x]	
161.54	163.98	Q187118	HC	TimS	[ ]	
163.98	165.81	Q187119	HC	TimS	[ ]	
165.81	167.34	Q187121	HC	TimS	[ ]	0.38m recovered
167.34	169.47	Q187122	HC	TimS	[x]	
169.47	171.5	Q187123	HC	TimS	[ ]	
171.5	173.43	Q187124	HC	TimS	[ ]	
173.43	175.56	Q187125	HC	TimS	[ ]	
175.56	178.31	Q187126	HC	TimS	[ ]	1m recovered
178.31	179.22	Q187127	HC	TimS	[ ]	0.35m recovered
179.22	180.14	Q187128	HC	TimS	[ ]	0.32m recovered
180.14	182.58	Q187129	HC	TimS	[x]	
182.58	183.49	Q187131	HC	TimS	[ ]	
183.49	185.32	Q187132	HC	TimS	[ ]	0.35m recovered

GeoSpark Logger Print Logs ~ Duplicate Samples

DataSet: ORO_GF

Hole ID: ORO13-10

From (m)	To (m)	Sample ID	Original Sample ID	QC Category	Comments
19.51	21.03	Ch:Q187015	Q187015	LABCHCK	
38.71	39.32	Q187033	Q187032	FD	
40.84	42.06	Ch:Q187035	Q187035	LABCHCK	
69.8	71.32	Ch:Q187055	Q187055	LABCHCK	
73.76	74.07	Pd:Q187058	Q187058	PREPCHK	
75.9	78.08	Q187062	Q187061	FD	
114.91	117.04	Ch:Q187086	Q187086	LABCHCK	
119	121.62	Q187089	Q187088	FD	
119	121.62	Ch:Q187089	Q187089	LABCHCK	
149.96	151.18	Ch:Q187109	Q187109	LABCHCK	
151.18	152.7	Pd:Q187111	Q187111	PREPCHK	
160.32	161.54	Q187117	Q187116	FD	
167.34	169.47	Ch:Q187122	Q187122	LABCHCK	
180.14	182.58	Ch:Q187129	Q187129	LABCHCK	

GeoSpark Logger Print Logs ~ Standards / Blanks

DataSet: **ORO_GF**

Hole ID: **ORO13-10**

Sample ID	Standard ID	Comments
Q187010	FB	
Q187020	CDN-GS-P6	
Q187030	FB	
Q187040	CDN-GS-P6	was orignally a switched standard typo of CDN-GS-5
Q187050	FB	
Q187060	CDN-CM-25	
Q187070	FB	
Q187080	CDN-GS-P6	
Q187090	FB	
Q187100	CDN-CM-25	
Q187110	FB	
Q187120	CDN-GS-P6	
Q187130	FB	

Gold Fields Selwyn – Quicklog 2013

<table>
<tr><td>Hole no: ORO13-11
Logged By: Tim Stubley</td><td>Az: 030</td><td>Dip: -55</td><td>Target depth:
225 m</td><td colspan="2">EOH: 258.47 m</td></tr>
<tr><td>Start date:
August 24, 2013</td><td>End date:
August 27, 2013</td><td>Pad:
ORO13-T</td><td>E: 404570</td><td>N: 7022795</td><td>Elevation:
1300 m</td></tr>
<tr><td colspan="3">Target: Continues section started with ORO13-09 in broad zone of anomalously high soil geochemistry. Designed to intersect the Hess Fault zone and drill through the core of a syncline (interpreted from local scale mapping) in silica - facies chert pebble conglomerate.</td><td colspan="3">Target explained?
Evidence of faulting possibly attributable to the Hess Fault Zone occurs between 17.68 and 31.39 m. No evidence of the targeted syncline was observed in drill core. Younging indicators and bedding measurements are consistent with moderately west dipping upward facing succession (western limb sheared off?). Possible secondary pyrite mineralisation within siltstone units is encouraging.</td></tr>
<tr><td colspan="6">Summary:
Location: ORO13-11 is located approximately 200m NNE of ORO13-09.
Lithology: Overburden to 10.01 m, followed by shale, argillite and siltstone to 12.35 m. Between 12.35 m and~ 31.39 m faulted siltstone, quartz- cemented breccia, gouge, and quartz- flooded conglomerate in which grain boundaries appear stylolitic, or sutured comprise a zone of higher strain. From 31.39 m graphitic shale extends to 107.23 m but is cut by two felsic dykes: the first (55.78 – 57.2 m) fine- grained equigranular with emerald green alteration mineral replacing phenocrysts, the second (79.25 – 81.23 m) unaltered. Black graphitic shale with extensive faulting extends to 131.12 m, followed by clay and pyrite altered felsic dyke to 132.12 m, and shale to 143.0 m. From 143.0 m to EOH at 258.47 m, drilling intersects a upwards - fining sequence that repetitively grades from pebble conglomerate to granular sandstone to siltstone to shale.
Alteration: FeOx alteration is strong along fracture surfaces in all units. Cross cutting dykes are moderately replaced by clay, though some primary texture can be seen. Moderate silica alteration may be associated with sheeted quartz veins that are common in the siliciclastic units. Secondary pyrite may be present locally.
Mineralization: Within the conglomerate to siltstone sequences primary and secondary pyrite are difficult to distinguish. In the conglomerates, massive pyrite occurs as clasts, aggregate pyrite locally forms rims around clasts or cores within them. Within siliceous siltstone horizons, rare dendritic pyrite crystals occur, and pyrite locally forms thin discontinuous veins that cross cut bedding.
Interpretation/Comments: Possible secondary pyrite mineralisation within siltstone units is encouraging. This hole targeted a syncline interpreted from mapping, however no evidence of that structure was observed in drill core. Younging indicators and bedding measurements are consistent with moderately west dipping upward facing succession. If the syncline exists, it is possible that the western limb has been sheared off in the faulting that occurs between 17.68 m and 31.39 m.</td></tr>
</table>

Shift	**From**	**To**	**Comments**
Aug 24/13 0 – 44.12 m	**0**	**10.01**	**Overburden**
	10.01	**12.35**	**Shale, argillite and siltstone (shArSi)** Rusty grey-brown fine – grained, massive - thinly bedded siliceous shale and siltstone. Blocky with FeOx±pyrite alteration on fracture planes.

			Abundant disseminated pyrite and minor aggregate pyrite. **Py ~4%**
	12.35	**17.68**	**Siliceous pebble conglomerate (qChPC)** Polymictic chert and shale pebble conglomerate. Rounded clasts 3 - 60mm include chert (~75%) and black mudstone (~25%) in coarse sandstone sized matix. Tectonic fabric apparent; stylolitic sutured clast boundaries, and local imbrication/straining of clasts ~45° tca. Fault related stockwork quartz veins <5mm, 10-50° tca. Local nodular and disseminated pyrite, massive pyrite forms breccia cement at lower contact. **Py ~ 20%**
	17.68	**19.75**	**Shale, argillite and siltstone (shArSi)** Medium grey fine – grained, massive - thinly bedded siliceous shale and siltstone. Minor FeOx on fracture planes. Abundant disseminated pyrite and minor aggregate pyrite. **Py ~4%**
	19.75	**20.73**	**Faulted siltstone (Fault, shArSi)** Fault zone, dominated by black gouge but semi- competent massive sections <10 cm occur locally, and host massive pyrite bands. **Py ~ 10%**
	20.73	**22.23**	**Quartz- cemented fault breccia (FaultBx)** Breccia? Siliceous grey rock and milky white vein quartz. Stylolitic 'suture' lines undulate throughout mass with faint preferred orientation ~30 – 50° tca. Possibly same protolith as 12.35 to 17.68 m but more highly strained? Local graphite coated shear planes ~50°. Hematite within fractures locally. Abundant pyrite disseminated along suture lines. **Py ~4%**
	22.23	**31.39**	**Fault Gouge (FaultGg)** Grey to black graphitic fault gouge and <15cm sections strongly clay altered decomposed rock. Common quartz veins and siliceous rubble at top of interval. Local shear fabric ~30° tca. Local pyrite bands in semi competent sections, <1cm, ~25°tca. **Py ~ 3%**
	31.39	**55.78**	**Black graphitic shale (ShU)** Laminated to massive graphitic shale with <1cm pyrite interbeds. Undulating bedding 10 – 45° tca may be locally folded. Abundant gouge and rubble zones. Shear planes parallel to and cross cutting bedding. Local zones with common deformed and broken quartz veins < 4mm, ~50° tca but typically discontinuous. Common disseminated pyrite. **Py ~2%**
Aug 25/13 44.12 – 141.73	**55.78**	**57.2**	**Felsic dyke (dike)** Light grey, fine - grained equigranular intrusive. Contacts ~ 50°. Primary texture obscured by strong clay alteration. Slightly darker elongate crystals <2mm long (possible relict hornblende needles?)

			appear to be replaced by pyrite. Within groundmass ~ 5 - 10% of crystals are partially replaced by an emerald green translucent mineral. Individual quartz vein <2cm, 5°tca extends upwards from lower contact. Common disseminated pyrite. **Py ~5%**
	57.2	**79.25**	**Black graphitic shale (ShU)** Laminated to massive graphitic shale with rare <1cm pyrite interbeds. Undulating bedding 10 – 45° tca may be locally folded. Abundant gouge and rubble zones. Shear planes parallel to and cross cutting bedding. Local zones with common deformed and broken quartz veins < 4mm, ~50° tca but typically discontinuous. Single felsic dykelet ~76 – 76.04m, with strongly hornfelsed margins containing disseminated pyrite. Common disseminated pyrite. **Py ~1%**
	79.25	**81.23**	**Felsic dyke (dike)** Grey fine – grained equigranular intrusive contains up to ~25% euhedral acicular hornblende <1mm, 10 % euhedral biotite <1mm, and ~3% aggregate pyrite <1mm in an aphanitic feldspathic groundmass. Sheared along upper contact ~ 30° tca. Lower contact unknown. **Py ~3%**
	81.23	**107.45**	**Black graphitic shale (ShU)** Laminated to massive graphitic shale with rare <1cm pyrite interbeds. Undulating bedding 10 – 45° tca may be locally folded. Abundant gouge and rubble zones. Shear planes parallel to and cross cutting bedding. Local zones with common deformed and broken quartz veins < 4mm, ~50° tca but typically discontinuous. Common disseminated pyrite. **Py ~1%**
	107.45	**114.36**	**Faulted shale (ShU)** Black shale. Blocky zone with abundant gouge. Shear planes ~ 35 – 65° tca. Deformed, discontinuous and broken quartz veins < 4mm, ~50° tca 25/m. Single pyrite nodule <5cm, trace disseminated pyrite. **Py ~0.1%**
	114.36	**131.12**	**Black graphitic shale (ShU)** Laminated to massive graphitic shale with common <1cm pyrite interbeds. Bedding steepens to 65° tca, defined locally by pyrite laminations. Local gouge and rubble zones. Local zones with common deformed and broken quartz veins < 4mm, ~50° tca but typically discontinuous. Common stratiform and disseminated pyrite. **Py ~2%**
	131.12	**132.12**	**Felsic dyke (dike)** Grey fine – grained equigranular intrusive: Texture muted by

			moderate clay alteration but appears to contain up to ~25% euhedral acicular hornblende <1mm, 10 % euhedral biotite <1mm, and ~3% aggregate pyrite <1mm in an aphanitic feldspathic groundmass. Pyrite may partially replace mafics. Sheared along upper contact ~50° tca. Sharp, chilled lower contact ~60° tca. **Py ~3%**
	132.12	**143**	**Black graphitic shale (ShU)** Laminated to massive graphitic shale with rare <1cm pyrite interbeds. Bedding~ 65° tca, defined locally by pyrite laminations. Local gouge and rubble zones. Local zones with common deformed and broken quartz veins < 4mm, ~50° tca but typically discontinuous. Common stratiform and disseminated pyrite. **Py ~2%**
Aug 26/13 141.73 – 188.50	**143**	**144.17**	**Chert pebble conglomerate – silica facies (qChPc)** Medium grey weakly stratified, clast supported chert and mudstone pebble conglomerate. Sub-rounded to sub-angular clasts <3cm in matrix varying from sandstone to mudstone. Locally, black mudstone and pyrite clasts have fluidic margins that 'wrap' chert clasts. Upper contact sheared but apparently conformable ~50° tca. Flame structures at base of bed indicate younging up-hole. Disseminated pyrite throughout, locally rims mudstone clasts. Clasts may contain, or rarely, be composed of pyrite. Rare vuggy - euhedral quartz veins, <1cm, 45° tca. **Py ~4%**
	144.17	**145.16**	**Shale (ShU)** Laminated black shale with thin sandy horizons ~60°tca. Flame structures at upper contact indicate that it was unconsolidated during pebble conglomerate deposition. Graphite-clay coated shear planes ~50°. Common nodular pyrite. **Py ~ 5%**
	145.16	**152.33**	**Sandstone (Sandst)** Medium - grained polymictic immature sandstone. Thin pebble horizons oriented ~55 -60° grade normally uphole. Composed of ~60% quartz sand mixed with fragments of mudstone, chert and massive pyrite (essentially same composition as pebble conglomerate). **Py ~5%**
	152.33	**153.62**	**Chert pebble conglomerate – silica facies (qChPc)** Pebble conglomerate with interbedded polymictic sandstone. Vuggy quartz±barite±ankerite veins heal shears oriented ~15 – 20° tca. Weakly disseminated pyrite, and rare pyrite clasts. **Py ~2%**
	153.62	**155.70**	**Sandstone, minor pebble horizons (Sandst)** Medium - grained polymictic immature sandstone. Thin pebble horizons oriented ~55 -60° grade normally uphole. Composed of ~60% quartz sand mixed with fragments of mudstone, chert and massive pyrite (essentially same composition as pebble

			conglomerate). **Py ~5%**
	155.70	**181.70**	**Shale, argillite and siltstone, minor sandstone lenses (ShArSi)** Thinly laminated (~50° tca) to massive shale, argillite and siltstone, with minor fine – grained sandstone interbeds. Common horizons up to 25 cm contain up to 60% pyrite. These zones appear more siliceous, and pyrite textures include laminations, amorphous aggregates and nodules. Discontinuous pyrite veins cross cut bedding at ~15- 30°tca between 171.3 – 171.65 m. Rare quartz veins, <1mm, 10 to 50°tca, 1/m. **Py ~ 20%**
	181.7	**195.59**	**Chert pebble conglomerate – silica facies (qChPc)** Matrix supported polymictic pebble conglomerate: Rounded to sub-angular chert, siltstone, shale and massive pyrite clasts <4cm in sandstone matrix. Locally grades from pebble – granular coarse sand, fining uphole (locally to shale beds). Black shale clasts have fluidic margins that locally 'wrap' chert clasts. Pyrite may form cores or rims to clasts, and also occurs as nodules in matrix. Local thin carbonate zones; carbonate veins fracture clasts and form cement in matrix. Common quartz veins, <4mm, ~15 to 50° tca. **Py ~ 6%**
Aug 27/13 188.50 – 258.47 m EOH	**195.59**	**199.16**	**Shale, argillite and siltstone, minor sandstone lenses (ShArSi)** Thinly laminated (~50° tca) to massive shale, argillite and siltstone. Common aggregate and nodular pyrite, local dendritic pyrite growth. Abundant disseminated pyrite **Py ~10%**
	199.16	**219.56**	**Chert pebble conglomerate – silica facies (qChPc)** Matrix supported polymictic pebble conglomerate: Rounded to sub-angular chert, siltstone, shale and massive pyrite clasts <4cm in sandstone matrix. Fining upwards sequence: grades from pebble – granular coarse sand, locally through shale. Black shale clasts have fluidic margins that locally 'wrap' chert clasts, and are present as rip-up clasts at near base of sequence. Pyrite may form cores or rims to clasts, (possible replacement/remobilisation? and also occurs as nodules in matrix. Common quartz veins, <4mm, ~15 to 50° tca. **Py ~4%**
	219.56	**225.35**	**Shale, argillite and siltstone, minor sandstone lenses (ShArSi)** Light grey gritty siltstone grades to mudstone with thin black shale interlamination. Common amorphous pyrite nodules, abundant disseminated pyrite. **Py ~6%**
	225.35	**237.8**	**Chert pebble conglomerate – silica facies (qChPc)** Matrix supported polymictic pebble conglomerate: Rounded to sub-angular chert, siltstone, shale and massive pyrite clasts <4cm in sandstone matrix. Common shearing, with fibrous slippery zeolite mineral in fractures. Stockwork quartz veins <2mm, 5 – 50° tca, 50/m occur proximal to fault zones, and matrix of conglomerate is slightly

			decomposed. Black shale clasts have fluidic margins that locally 'wrap' chert clasts, and are present as rip-up clasts at near base of sequence. Pyrite may form cores or rims to clasts, (possible replacement/remobilisation? and also occurs as nodules in matrix. Individual <4cm pyrite bed (?) at ~253.35 deformed by conglomerate loading. **Py ~4%**
	237.8	**240.54**	**Graphitic shale (ShU)** Black graphitic shale. Faulted and decomposed. Weakly disseminated pyrite. **Py ~1%**
	250.54	**258.47**	**Chert pebble conglomerate – silica facies (qChPc)** Matrix supported polymictic pebble conglomerate: Rounded to sub-angular chert, siltstone, shale and massive pyrite clasts <4cm in sandstone matrix. Stockwork quartz veins <2mm, 5 – 50° tca, 50/m occur proximal to minor fault zones, and matrix of conglomerate is slightly decomposed. Hole ends in fault gouge; shear planes ~15° tca. Black shale clasts have fluidic margins that locally 'wrap' chert clasts, and are present as rip-up clasts at near base of sequence. Pyrite may form cores or rims to clasts, (possible replacement/remobilisation? and also occurs as nodules in matrix. **Py ~4%**

GeoSpark Logger Print Logs ~ Collars

DataSet: **ORO_GF**

Hole: ORO13-11

Depth (m)	Hole Type	Core Diamete	Grid ID	East	North	Elevation	Survey Method	Survey Date	Survey By	Date Started	Date Completed	Logged By	Prospect	Validated By
258.47 m	DD	HQ/NQ	UTM09N_NAD83	404570	7022795	1300	GPS	24/08/2013		24/08/2013	27/08/2013	TimS	Golden Hinge	

GeoSpark Logger Print Logs ~ DH Surveys

DataSet: ORO_GF

Hole ID: ORO13-11

Depth (m)	Survey Method	Grid ID	Dip	Surv. Tool Azimuth	Magnetic Declination	Corrected Azimuth	Magnetics	Date Surveyed	Survey Instrument	Bad Reading	Comments
0	COLL	UTM09N_NAD83	-50	30				26/08/2013	CMP	☐	
69.8	EZ Shot	UTM09N_NAD83	-49.7	9.4	22.5	31.9		25/08/2013	EZ	☐	
124.36	EZ Shot	UTM09N_NAD83	-49.8	10.1	22.5	32.6		25/08/2013	EZ	☐	
187.45	EZ Shot	UTM09N_NAD83	-48.4	12.9	22.5	35.4		25/08/2013	EZ	☐	
255.42	EZ Shot	UTM09N_NAD83	-44.4	15.3	22.5	37.8		27/08/2013	EZ	☐	

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DataSet: ORO_GF

Hole ID: ORO13-11

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	0	10.01	Overburden	Overburden (OB)	

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	10.01	12.35	Siltstone - Cherty	shale argillite and siltstone	Rusty grey-brown fine – grained, massive - thinly bedded siliceous shale and siltstone. Blocky with FeOx±pyrite alteration on fracture planes. Abundant disseminated pyrite and minor aggregate pyrite. Py ~4%

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	10.01	12.35	Py	4	AGG										Abundant disseminated pyrite and minor aggregate pyrite. Py ~4%

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	10.01	12.35	VQtz	±py	1										

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	12.35	17.68	Conglomerate	Chert pebble conglomerate (silicate facies)	Pmict clast sup chert (75%)+shale(25%) peb conglom. Cg sand mtx. Stylolitic sutured clast bdries,local strain ~45°. Stkwk Qtz vns. Locl Nod and Dis Py, mass Py cement at lower contact.

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DataSet: **ORO_GF**

Hole ID: **ORO13-11**

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
12.35	17.68	Py	20	NOD										Local nodular and disseminated pyrite, massive pyrite forms breccia cement at lower contact. Py ~ 20%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
12.35	17.68	VQtz	n/a	30										Fault related stockwork quartz veins <5mm, 10-50° tca.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
12.35	17.68	FLTBX	S	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	17.68	19.75	Siltstone - Cherty	shale argillite and siltstone	Medium grey fine – grained, massive - thinly bedded siliceous shale and siltstone. Minor FeOx on fracture planes. Abundant disseminated pyrite and minor aggregate pyrite. Py ~4%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
17.68	19.75	Py	4	DIS										Abundant disseminated pyrite and minor aggregate pyrite. Py ~4%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
17.68	19.75	VQtz	±carb	0.25										

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	19.75	20.73	Tectonic/Fault Rock - Undifferentiated	Fault (UT)	Fault zone, dominated by black gouge and rubble but semi- competent massive pyrite- hosting sections <10 cm occur locally. Py ~ 10%

DataSet: ORO_GF

Hole ID: ORO13-11

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
19.75	20.73	Py	10	MASS										Fault zone, dominated by black gouge but semi- competent massive pyrite- hosting sections <10 cm occur locally. Py ~ 10%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
19.75	20.73	FLTG	VS	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	20.73	22.23	Fault Breccia	Fault breccia (UTB)	Sil grey rock+milky white vn qtz. Stylolitic suture lines ori'd ~30–50° tca th/out. Poss same rock as 12.35-17.68, but more strained? Local graphitic shears 50°. Abun py dis along suture lines.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
20.73	22.23	Py	2	DIS										Abundant pyrite disseminated along suture lines. Py ~4%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
19.75	22.23	VQtz	n/a											Breccia? Siliceous grey rock and milky white vein quartz. Stylolitic 'suture' lines undulate throughout mass with faint preferred orientation ~30 – 50° tca.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
20.73	22.23	FLTBX	S	40

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	22.23	31.39	Fault Gouge	Fault gouge (UTG)	Grey-black graphitic flt gouge and <15cm sect S clay alt decomposed rock. Comn Qtz vns + siliceous rubble at top. Local shear ~30°. Local py bands in semi competent zones <1cm, ~25.

DataSet: ORO_GF

Hole ID: ORO13-11

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
22.23	31.39	Py	3	MASS										Local pyrite bands in semi competent sections, <1cm, ~25°tca. Py ~ 3%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
22.23	31.39	VQtz	±clays	5										Rare quartz veins +- clay alteration

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
22.23	31.39	FLTG	VS	30

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	31.39	55.78	Black Shale	undifferentiated shale	Laminated to massive graphitic shale with <1cm pyrite interbeds. Undulating bedding 10 – 45° tca may be locally folded. Abundant gouge and rubble zones. Shear planes parallel to znd cross cutting bedding. Common disseminated pyrite.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
31.39	55.78	Py	2	DIS										Laminated to massive graphitic shale with <1cm pyrite interbeds. Common disseminated pyrite. Py ~2%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
31.39	55.78	VQtz	±clays	0.5										rare individual quartz veins

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
45.3	45.35	FLTG	VS	25
46	48.17			
51	52	RUB	S	
53.07	53.1	FLTG	VS	15

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	55.78	57.2	Felsic Dyke	Dike - nonspecific	Lgrey fg eqg dyke, or'd 50° tca. Prim text obsc by S clay alt. Dark,elongate xtals<2mm (Hbl?) repl by Py. W/ingmass 5-10% xtals repl by emerald grn mineral. Indiv qtz vn <2cm, 5°tca upwrd from lower cont.

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DataSet: ORO_GF

Hole ID: ORO13-11

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
55.78	57.2	Py	5	DIS										possible relict hornblende needles appear to be replaced by pyrite, comon disseminated pyrite.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
55.78	57.2	VQtz	n/a	5										Individual quartz vein <2cm, 5°tca extends upwards from lower contact.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	57.2	79.25	Black Shale	undifferentiated shale	Lam - Mass black graphitic shale, rare <1cmpy intrbds. Undulating local folded beds, 10-45° tca. Shears para to beds and X cut. Local zones comn deforemed+broken qtzvns<4mm,~50° tca but discontinuous. Felsic dyklt, 76-76.04m.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
57.2	79.25	Py	1	DIS										Single felsic dykelet ~76 – 76.04m, with strongly hornfelsed margins containing disseminated pyrite. Common disseminated pyrite.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
57.2	79.25	VQtz	n/a	3										Local zones with common deformed and broken quartz veins < 4mm, ~50° tca but typically discontinuous.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
58.83	59.3	FLTG	S	
60.9	61			35
61.75	63.6	RUB		
66.75	66.95	FLT		50
72.6	73	RUB		
73	73.3	FLT		35
74	75.3	RUB		
76	76.01	CI		65
76.04	76.05			
76.3	79.25	RUB	S	

DataSet: ORO_GF

Hole ID: ORO13-11

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	79.25	81.73	Felsic Dyke	Dike - nonspecific	Grey fg eqg dyke. Unaltered. Contains < ~25% euh acicular hbl <1mm, 10 % euh bio <1mm, and ~3% aggr py <1mm in aphanititc feldspathic gmass.Sheared along upper contact ~ 30° tca. Lower contact broken, but apparently unfaulted.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
79.25	81.23	Py	3	DIS										Grey fine – grained equigranular intrusive contains up to ~25% euhedral acicular hornblende <1mm, 10 % euhedral biotite <1mm, and ~3% aggregate pyrite <1mm in an aphanititc feldspathic groundmass.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
79.25	81.23	VQtz	n/a	2										

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	81.73	107.45	Black Shale	undifferentiated shale	Lam - Mass black graphitic shale, rare <1cmpy intrbds. Undulating local folded beds, 10-45° tca. Shears para to beds and X cut. Local zones comn deforemed+broken qtzvns<4mm,~50° tca but discontinuous.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
81.23	107.45	Py	1	DIS										

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
81.23	107.45	VQtz	n/a	3										Local zones with common deformed and broken quartz veins < 4mm, ~50° tca but typically discontinuous.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
85.5	85.75	FLTG	VS	
85.75	89	RUB	S	
89.95	90	FLTG		65
96.4	96.41	SSF		10
97.3	97.31	FLT		20
104.13	104.17	FLTG	S	60
107	107.2	FLT		50

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DataSet: ORO_GF

Hole ID: ORO13-11

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	107.45	114.36	Tectonic/Fault Rock - Undifferentiated	Fault (UT)	Black shale. Blocky zone with abundant gouge. Shear planes ~ 35 – 65° tca. Deformed, discontinuous and broken quartz veins < 4mm, ~50° tca 25/m. Single pyrite nodule <5cm, trace disseminated pyrite. Py ~0.1%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
107.45	114.36	Py	0.1	DIS										trace pyrite

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
107.45	114.36	VQtz	n/a	5										Deformed, discontinuous and broken quartz veins < 4mm, ~50° tca 25/m.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
107.45	114.36	FLT	S	50

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	114.36	131.12	Black Shale	undifferentiated shale	Lam to mass black graphitic shale, Common <1cm py intrbds. Bddng steepens to 65° tca. Local gouge and rubble. Comn deformed broken qtz vns <4mm ~50° tca. Comn stratiform and disseminated pyrite ~2%.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
114.36	131.12	Py	2	DIS										Common stratiform and disseminated pyrite. Py ~2%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
114.36	131.12	VQtz	n/a	2										. Local zones with common deformed and broken quartz veins < 4mm, ~50° tca but typically discontinuous

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
120.5	120.51	BED		60
120.51	120.52	FOL		
126	126.2	FLTG		
129.2	129.3			
130.45	131.12	RUB	S	

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DataSet: ORO_GF

Hole ID: ORO13-11

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	131.12	132.12	Felsic Dyke	Dike - nonspecific	Grey fg eqg felsic dyke. Text muted by mod clay alt, but appears to contain up to ~25% euhl acic hbl <1mm, 10 % euh bio <1mm, and ~3% agg py<1mm in an aphanitic feldspathic gmass. Chilled lower contact ~60° tca. Py ~3%.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	131.12	132.12	Py	3	DIS										~3% aggregate pyrite <1mm in an aphanitic feldspathic groundmass. Pyrite may partially replace mafics.

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	131.12	132.12	NoVeins	n/a											

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	132.12	144.17	Black Shale	undifferentiated shale	Lam to mass black graphitic shale, Common <1cm py intrbds. Bddng ~65° tca. Local gouge and rubble. Comn deformed broken qtz vns <4mm ~50° tca. Comn stratiform and disseminated pyrite ~2%.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	132.12	144.17	Py	2	DIS										Common stratiform and disseminated pyrite. Py ~2%

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	132.12	144.17	VQtz	n/a	2										Local zones with common deformed and broken quartz veins < 4mm, ~50° tca but typically discontinuous.

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	136	136.01	BED		60
	141	141.6	FLTG		40
	142.95	143		S	50

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	144.17	145.16	Black Shale	undifferentiated shale	Laminated black shale with thin sandy horizons ~60°tca. Flame structures at upper contact indicate that it was unconsolidated during pebble conglomerate deposition. Graphite-clay coated shear planes ~50°. Common nodular pyrite.

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DataSet: **ORO_GF**

Hole ID: **ORO13-11**

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
144.17	145.16	Py	5	NOD										Common nodular pyrite. Py ~ 5%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
144.17	145.16	NoVeins	n/an/a											

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
144.17	144.18	LOAD		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	145.16	152.33	Sandstone - Lithic	Sandstone (SSSS)	Medium - grained polymictic immature sandstone. Thin pebble horizons oriented ~55 -60° grade normally uphole. Composed of ~60% quartz sand mixed with fragments of mudstone, chert and massive pyrite. Grades up from conglomerate. Py ~5%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
145.16	152.33	Py	5	REPL										Composed of ~60% quartz sand mixed with fragments of mudstone, chert and massive pyrite.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
145.16	152.33	VQtz	n/a	0.5										v rare qtz vns

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
145.17	145.18	BED		57.5

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	152.33	153.62	Conglomerate	Chert pebble conglomerate (silicate facies)	Pebble conglomerate with interbedded polymictic sandstone. Vuggy quartz±barite±ankerite veins heal shears oriented ~15 – 20° tca. Weakly disseminated pyrite, and rare pyrite clasts. Py ~2%

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Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
152.33	153.62	Py	2	DIS										Weakly disseminated pyrite, and rare pyrite clasts. Py ~2%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
152.33	153.62	VQCarb	±bar	10										. Vuggy quartz±barite±ankerite veins heal shears oriented ~15 – 20° tca.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
152.33	152.35	FLT		50
153.1	153.13			15
153.45	153.47			20

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	153.62	155.7	Sandstone	Sandstone (SSSS)	Medium - grained polymictic immature sandstone. Thin pebble horizons oriented ~55 -60° grade normally uphole. Composed of ~60% quartz sand mixed with fragments of mudstone, chert and massive pyrite

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
153.62	155.7	Py	5	MASS										Composed of ~60% quartz sand mixed with fragments of mudstone, chert and massive pyrite

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
153.62	155.7	VQtz	n/a	0.5										rare individual quartz veins

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
154	154.2	BED		50
155	155.02	FLT		20

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	155.7	181.7	Siltstone and Mudstone	shale argillite and siltstone	Thnl lam (~50° tca) to mass ShArSi w/ minor fg sst intrbds. Comn horizons<25cm contain <60%py; these zones more siliceous, py text incl lam, amorph agg and nod. Discontinuous py vns ~15-30°tca btwn 171.3–171.65m. Rare <1mm qtz vns, 10-50° tca, 1/m.

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Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
155.7	181.7	Py	20	REPL										Common horizons up to 25 cm contain up to 60% pyrite. These zones appear more siliceous, and pyrite textures include laminations, amorphous aggregates and nodules. Discontinuous pyrite veins cross cut bedding at ~15- 30°tca between 171.3 – 171.65 m.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
155.7	181.7	Vpy	±qtz	0.25										Local discontinuous pyrite veins cross cut bedding at ~15- 30°tca between 171.3 – 171.65 m. Rare quartz veins, <1mm, 10 to 50°tca, 1/m.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
159.5	159.6	FLTG		50
160.75	160.76	BED		45
165.6	165.7	FLT		
173.49	173.5	BED		40
175.56	175.7	FLTG		45
179.75	179.85			50

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	181.7	195.59	Conglomerate	Chert pebble conglomerate (silicate facies)	Mtx-supt pmict peb cong. Rnd-subang chrt, zst,shale,masspy clasts in sst mtx. Fining-up seq: peb-sand-shale. Blk shale rip-up clasts w/ fluidal margins. Py forms clast cores or rims. Py nod in mtx. Local cb cmnt, comn qtz vns.

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Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
181.7	195.59	Py	6	REPL										Pyrite may form cores or rims to clasts, and also occurs as nodules in matrix.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
181.7	195.59	VQtz	n/a	1	Vcarb	±qtz	0.1							Local thin carbonate zones; carbonate veins fracture clasts and form cement in matrix. Common quartz veins, <4mm, ~15 to 50° tca.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
182.5	182.51	FLT		50
183.56	183.57			20
185.57	185.59			40

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	195.59	199.16	Siltstone	shale argillite and siltstone	Thinly laminated (~50° tca) to massive shale, argillite and siltstone. Common aggregate and nodular pyrite, local dendritic pyrite growth. Abundant disseminated pyrite Py ~10%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
195.59	199.16	Py	10	AGG										Common aggregate and nodular pyrite, local dendritic pyrite growth. Abundant disseminated pyrite Py ~10%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
195.59	199.16	NoVeins	n/an/a											

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	199.16	219.56	Conglomerate	Chert pebble conglomerate (silicate facies)	Mtx-supt pmict peb cong. Rnd-subang chrt, zst,shale,masspy clasts in sst mtx. Fining-up seq: peb-sand-shale. Blk shale rip-up clasts w/ fluidal margins. Py forms clast cores or rims. Py nod in mtx. Local cb cmnt, comn qtz vns.

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Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
199.16	219.56	Py	4	REPL										Pyrite may form cores or rims to clasts, (possible replacement/remobilisation? And also occurs as nodules in matrix. Py ~4%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
199.16	219.56	VQtz	n/a	1										Common quartz veins, <4mm, ~15 to 50° tca.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
200.2	200.21	FLT		10
214.25	214.26			

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	219.56	225.35	Siltstone	shale argillite and siltstone	Light grey gritty siltstone grades to mudstone with thin black shale interlamination. Common amorphous pyrite nodules, abundant disseminated pyrite. Py ~6%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
219.56	225.35	Py	6	DIS										Common amorphous pyrite nodules, abundant disseminated pyrite. Py ~6%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
219.56	225.35	VQtz	n/a	0.5										rare quartz veins

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
220.05	220.06	BED		55
225.3	225.35	FLT		50

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	225.35	237.8	Conglomerate	Chert pebble conglomerate (silicate facies)	Mtx-supt pmict peb cong. Fining-up seq: peb-sand-shale. Blk shale rip-up clasts w/ fluidal margins. Py forms clast cores or rims. Py nod in mtx. Qtz vn stkwk prox to flt zones, mtx decomposed in these zones. Slipry fibrous zeolite on shear planes.

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Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
225.35	237.8	Py	4	REPL										Pyrite may form cores or rims to clasts, (possible replacement/remobilisation? and also occurs as nodules in matrix. Individual <4cm pyrite bed (?) at ~253.35 deformed by conglomerate loading. Py ~4%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
225.35	237.8	VQtz	n/a	2.5										Stockwork quartz veins <2mm, 5 – 50° tca, 50/m occur proximal to fault zones, and matrix of conglomerate is slightly decomposed.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
228.1	230.5	RUB		
236.7	237.18	FLT		40

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	237.8	250.54	Black Shale	undifferentiated shale	Black graphitic shale. Faulted and decomposed. Weakly disseminated pyrite. Py ~1%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
237.8	240.54	Py	1	DIS										

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
237.8	250.54	NoVeins	n/an/a											

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
237.8	239.54	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	250.54	258.47	Conglomerate	Chert pebble conglomerate (silicate facies)	Mtx-supt pmict peb-cob cong. Fining-up seq: peb-sand-shale. Blk shale rip-up clasts w/ fluidal margins. Py forms clast cores or rims. Py nod in mtx. Qtz vn stkwk prox to flt zones, mtx decomposed in these zones. Ends in flt gouge w/ shear planes ~15-30deg

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Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
240.54	258.47	Py	4	REPL										Pyrite may form cores or rims to clasts, (possible replacement/remobilisation? and also occurs as nodules in matrix. Py ~4%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
250.54	258.47	VQtz	n/a	2.5										Stockwork quartz veins <2mm, 5 – 50° tca, 50/m occur proximal to minor fault zones, and matrix of conglomerate is slightly decomposed.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
257	258	FLT		
258	258.47	FLTG		

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From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
10.01	11.58	1.57	1.14	72.6115	0.1	6.37	sli	40	40	STR		
11.58	12.5	0.92	0.67	72.8261	0.1	10.87	sli	25	25	STR		
12.5	13.71	1.21	1.46	120.661	0.92	76.03	sli	35	35	STR		
13.71	15.24	1.53	0.49	32.0262	0.2	13.07	sli	25	25	SFT		
15.24	16.15	0.91	0.91	100	0	0	sli	20	20	SFT		
16.15	17.68	1.53	1.38	90.1960	0.37	24.18	sli	22	22	STR		
17.68	19.2	1.52	1.43	94.0789	0.26	17.11	sli	16	16	STR		
19.2	20.73	1.53	1.2	78.4314	0.28	18.3		30	30	SFT		fault zone begins~19.75
20.73	22.25	1.52	0.81	53.2895	0.72	47.37	sli	50	50	STR		qtz-vn silica bx
22.25	23.78	1.53	0.75	49.0196	0	0	sof	50	50	SFT	lots of clay gouge	
23.78	25.3	1.52	0.1	6.57895	0	0	sof	20	20	SFT	clay gouge rubble	
25.3	26.82	1.52	0.9	59.2105	0	0	sof	50	50	SFT	lots of rubble, some clay	
26.82	28.35	1.53	1.05	68.6274	0	0	sof	100	100	SFT	Graphitic shale rubble	
28.35	29.87	1.52	1.35	88.8158	0	0	sli	100	100	SFT	rubble-graphtic	
29.87	31.39	1.52	0.55	36.1843	0	0	sof	50	50	SFT	graphitic rubble & clay	
31.39	32	0.61	0.52	85.2458	0	0	sof	50	50	VWK	rubble	
32	33.53	1.53	1.3	84.9674	0	0	sof	100	100	VWK		
33.53	34.44	0.91	0.72	79.1209	0.11	12.09	sli	25	25	SFT	carbonaceous with clay	
34.44	35.97	1.53	1.48	96.7319	0.18	11.76	sli	50	50	VWK	lot of broken rubble	
35.97	37.5	1.53	1.05	68.6275	0.32	20.92	sof	50	50	VWK		
37.5	39	1.5	1.33	88.6667	0.18	12	sli	40	40	STR		
39	40.54	1.54	1.54	99.9999	0.45	29.22	sli	16	16	STR		
40.54	42.06	1.52	1.46	96.0526	0.12	7.89	sli	24	24	STR		
42.06	43.59	1.53	1.35	88.2354	0	0	sof	40	40	SFT	Graphitic	
43.59	45.11	1.52	1.4	92.1052	0.34	22.37	sof	50	50	SFT	graphitic	
45.11	46.63	1.52	1.23	80.9210	0	0	sof	100	100	SFT	graphitic	gouge
46.63	48.17	1.54	1.2	77.9222	0	0	sof	100	100	SFT		gouge
48.17	49.68	1.51	1.3	86.0926	0.54	35.76	sof	40	40	VWK	graphitic	
49.68	50.29	0.61	0.18	29.5082	0.1	16.39	sli	3	3	VWK	graphitic	
50.29	51.82	1.53	1.19	77.7779	0.15	9.8	sli	50	50	VWK	graphitic	
51.82	52.73	0.91	0.91	100	0.14	15.38	sli	40	40	VWK	graphitic	
52.73	53.05	0.32	0.29	90.6251	0	0	sli	3	3	VWK	graphitic	
53.05	54.56	1.51	1.28	84.7681	0.11	7.28	sli	52	52	VWK	graphitic	
54.56	55.78	1.22	1.17	95.9018	0.86	70.49	sli	16	16	STR	graphitic	qtz stwk
55.78	57.3	1.52	1.54	101.316	0.76	50	una	40	40	STR		dyke
57.3	58.82	1.52	1.25	82.2368	0.36	23.68	sof	50	50	SFT	graphitic	
58.82	60.35	1.53	1.38	90.1962	0.13	8.5	sof	50	50	SFT	graphitic	gouge sections

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From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
60.35	61.87	1.52	1.48	97.3684	0.16	10.53	sof	100	100	SFT	graphitic	gouge
61.87	63.41	1.54	0.92	59.7402	0	0	sof	100	100	SFT	graphitic	gouge
63.41	64.92	1.51	1	66.2252	0	0	sli	52	52	VWK	graphitic	
64.92	66.45	1.53	1.38	90.1962	0.66	43.14	sli	45	45	VWK	graphitic	minor qtz stwk
66.45	67.97	1.52	1.43	94.0787	0.45	29.61	sli	50	50	SFT	graphitic	gouge sections
67.97	69.49	1.52	1.38	90.7897	0.47	30.92	sli	35	35	VWK	graphitic	
69.49	71.02	1.53	1.43	93.4641	0.21	13.73	sli	45	45	VWK	graphitic	
71.02	72.54	1.52	1.43	94.0787	0.15	9.87	sli	65	65	VWK	graphitic	
72.54	74.07	1.53	1.5	98.0393	0.27	17.65	sof	100	100	SFT	graphitic	gougy sections
74.07	75.3	1.23	0.92	74.7966	0	0	sof	100	100	SFT	graphitic	gouge and low angle fractures
75.3	76.84	1.54	1.35	87.6627	0.24	15.58	sof	75	75	VWK	graphitic	crumbly
76.84	78.33	1.49	0.5	33.5569	0	0	sof	100	100	SFT	graphitic	crumbly and gougy
78.33	79.25	0.92	0.52	56.5219	0.14	15.22	sof	50	50	SFT	graphitic	crumbly and gougy
79.25	80.18	0.93	0.93	100	0.77	82.8	una	11	11	STR		dyke
80.18	81.69	1.51	1.49	98.6754	1.06	70.2	una	27	27	STR		dyke
81.69	83.21	1.52	1.46	96.0528	0.38	25	sli	40	40	VWK	graphitic	wk poker chips
83.21	84.73	1.52	1.38	90.7892	0.74	48.68	sli	100	100	VWK	graphitic	crumbly sections
84.73	86.28	1.55	1.3	83.8712	0.11	7.1	sli	70	70	VWK	graphitic	crumbly
86.28	87.8	1.52	1.41	92.7629	0.28	18.42	sli	100	100	VWK	graphitic	very crumbly
87.8	89.31	1.51	1.23	81.4573	0.15	9.93	sof	100	100	VWK	graphitic	very crumbly
89.31	90.85	1.54	1.43	92.8571	0.23	14.94	sof	50	50	VWK	graphitic	very crumbly
90.85	92.38	1.53	1.47	96.0785	1.13	73.86	sli	10	10	STR	graphitic	wk qtz stwk
92.38	93.9	1.52	1.36	89.4734	0.62	40.79	sli	29	29	VWK	graphitic	qtz stwk
93.9	95.43	1.53	1.45	94.7713	0.63	41.18	sli	60	60	VWK	graphitic	crumbly
95.43	96.32	0.89	0.93	104.495	0.12	13.48	sli	75	75	VWK	graphitic	
96.32	97.84	1.52	1.44	94.7371	0	0	sli	50	50	VWK	graphitic	
97.84	98.48	0.64	0.4	62.4993	0	0	sof	20	20	SFT	graphitic	mud section
98.48	99.97	1.49	1.37	91.9464	0.54	36.24	sli	60	60	VWK	graphitic	
99.97	100.3	0.33	0.28	84.8480	0	0	sli	9	9	VWK	graphitic	
100.3	100.89	0.59	0.29	49.1528	0	0	sli	15	15	VWK	graphitic	reduced to NQ
100.89	101.8	0.91	0.27	29.6702	0	0	sli	50	50	VWK	graphitic	
101.8	103.02	1.22	0.32	26.2297	0	0	sli	50	50	VWK	graphitic	
103.02	106.07	3.05	2.36	77.377	0.22	7.21	sli	100	100	VWK	graphitic	
106.07	107.29	1.22	0.78	63.9344	0	0	sli	30	30	VWK	graphitic	
107.29	109.12	1.83	1.33	72.6775	0.13	7.1	sli	100	100	VWK	graphitic	fault, crumbly
109.12	112.17	3.05	1.92	62.9509	0.26	8.52	sof	100	100	SFT	graphitic	gougy,qtz stwk
112.17	115.21	3.04	2.8	92.1052	0.83	27.3	sof	100	100	SFT	graphitic	fault, gouge, qtz stwk
115.21	117.65	2.44	1.87	76.6393	0.38	15.57	sli	45	45	VWK	graphitic	
117.65	119.18	1.53	1.3	84.9674	0	0	sli	65	65	VWK	graphitic	

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From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
119.18	121.31	2.13	1.52	71.3616	0.18	8.45	sli	66	66	VWK	graphitic	
121.31	124.36	3.05	2.82	92.4589	0.21	6.89	sli	123	123	VWK	graphitic	poker chips
124.36	124.97	0.61	0.5	81.9671	0	0	sli	60	60	VWK	graphitic	
124.97	126.19	1.22	0.69	56.5573	0	0	sli	100	100	VWK	graphitic	crumbly
126.19	127.41	1.22	0.45	36.8852	0	0	sli	100	100	VWK	graphitic	poker chips
127.41	128.93	1.52	0.79	51.9741	0	0	sli	100	100	VWK	graphitic	crumbly sections
128.93	130.45	1.52	0.97	63.8156	0	0	sli	100	100	VWK	graphitic	crumbly sections
130.45	131.67	1.22	0.73	59.8360	0.21	17.21	sli	40	40	VWK		dyke
131.67	133.5	1.83	1.62	88.5245	0.47	25.68	sli	38	38	VWK	graphitic	part dyke, part graph shale
133.5	135.9	2.4	2.06	85.8336	0.46	19.17	sli	63	63	VWK	graphitic	
135.9	136.55	0.65	0.5	76.922	0.12	18.46	sli	12	12	VWK	graphitic	
136.55	139.6	3.05	2.92	95.7376	1.25	40.98	sli	62	62	VWK	graphitic	
139.6	140.24	0.64	0.39	60.9376	0	0	sli	42	42	VWK	graphitic	
140.24	141.73	1.49	0.93	62.4165	0.14	9.4	sli	100	100	SFT	graphitic	crumbly and gouge sections
141.73	142.34	0.61	0.24	39.3442	0	0	sof	20	20	SFT	graphitic rubble	
142.34	145.69	3.35	3.1	92.5371	0.96	28.66	sli	48	48	SFT		
145.69	147.83	2.14	2.14	100	1.36	63.55	sli	21	21	STR		
147.83	150.88	3.05	3.05	99.9999	2.35	77.05	sli	30	30	STR		
150.88	153.92	3.04	2.95	97.0397	1.45	47.7	sli	60	60	STR		
153.92	156.97	3.05	3	98.3606	0.95	31.15	sof	40	40	STR		
156.97	157.89	0.92	0.7	76.0871	0.22	23.91	sof	14	14	STR		
157.89	160.63	2.74	2.53	92.3356	0.57	20.8	sof	33	33	SFT		
160.63	163.68	3.05	2.92	95.7381	1.06	34.75	sof	55	55	STR		
163.68	166.73	3.05	2.75	90.1638	1.07	35.08	sof	45	45	SFT		
166.73	169.77	3.04	2.94	96.7103	1.92	63.16	sof	32	32	STR		
169.77	172.82	3.05	3.05	99.9999	2.2	72.13	sof	24	24	STR		
172.82	175.56	2.74	2.74	100.000	1.45	52.92	sof	44	44	SFT		
175.56	178.61	3.05	3.05	99.9999	0.87	28.52	sof	47	47	STR		
178.61	181.66	3.05	2.86	93.7704	1.96	64.26	sof	38	38	STR		
181.66	182.27	0.61	0.47	77.0491	0	0	sof	16	16	STR		
182.27	185.32	3.05	2.91	95.4097	0.96	31.48	sof	45	45	STR		
185.32	187.45	2.13	1.98	92.9582	0.72	33.8	sof	35	35	STR		
187.45	188.06	0.61	0.55	90.1638	0.23	37.7	sli	5	5	STR		
188.06	189.89	1.83	1.83	99.9999	0.65	35.52	sli	50	50	STR		
189.89	191.41	1.52	1.4	92.105	0.8	52.63	sli	60	60	STR		
191.41	194.46	3.05	2.95	96.7212	2.08	68.2	sli	24	24	STR		
194.46	197.51	3.05	2.98	97.7053	2.32	76.07	sli	27	27	STR		
197.51	200.56	3.05	2.96	97.0491	1.98	64.92	sli	32	32	STR		
200.56	203.61	3.05	3.11	101.967	2.69	88.2	sli	35	35	STR		

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From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
203.61	206.65	3.04	2.95	97.0397	2.65	87.17	sli	10	10	STR		
206.65	209.09	2.44	2.44	99.9999	2.36	96.72	sli	14	14	STR		
209.09	212.14	3.05	3.05	99.9999	2.2	72.13	sli	12	12	STR		
212.14	212.75	0.61	0.61	99.9999	0.43	70.49	sli	6	6	STR		
212.75	215.8	3.05	2.92	95.7376	0.95	31.15	sli	22	22	STR		
215.8	218.84	3.04	3	98.6844	2.52	82.89	sli	28	28	STR		
218.84	221.9	3.06	3.06	100.000	1.45	47.39	sli	36	36	STR		
221.9	224.94	3.04	3.08	101.316	1.4	46.05	sof	42	42	STR		
224.94	228	3.06	2.88	94.1177	1.22	39.87	sli	70	70	STR		
228	231.04	3.04	2.1	69.0791	0.38	12.5	sli	100	100	STR		
231.04	234.09	3.05	3	98.3606	2.62	85.9	sli	39	39	STR		
234.09	237.13	3.04	2.8	92.105	1.44	47.37	sli	50	50	STR		
237.13	240.18	3.05	2.85	93.443	0.73	23.93	sof	40	40	STR		
240.18	243.23	3.05	2.89	94.7540	2.05	67.21	sli	16	16	STR		
243.23	246.28	3.05	2.98	97.7048	1.41	46.23	sli	37	37	STR		
246.28	249.33	3.05	3.2	104.918	2.54	83.28	sli	35	35	STR		
249.33	252.37	3.04	2.85	93.7502	1.82	59.87	sli	45	45	STR		
252.37	255.42	3.05	2.85	93.4425	1.9	62.3	sli	42	42	STR		
255.42	258.47	3.05	2.85	93.4425	1.46	47.87	sli	60	60	SFT		END OF HOLE

GeoSpark Logger Print Logs ~ Mag Susceptibility

DataSet: ORO_GF

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From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
10.01	11.58	1.57	0.018	0.028	0.02	0.022				
11.58	12.35	0.77	0.025	0.1	0.03	0.052				
12.35	13.71	1.36	0.004	0.369	0	0.124				
13.71	15.24	1.53	0.005	0.024	0.012	0.014				
15.24	16.15	0.91	0.199	0.007	0.006	0.071				
16.15	17.68	1.53	0.019	0.192	0.014	0.075				
17.68	19.75	2.07	-0.01	0	0.014	0.001				
19.75	20.73	0.98	0.007	0.189	0.009	0.068				
20.73	22.23	1.5	0.007	0.192	0.016	0.072				
22.23	25.3	3.07	0.031	0.024	0.167	0.074				
25.3	26.82	1.52	0.138	0.008	0.183	0.11				
26.82	28.35	1.53	0.943	0.017	0.024	0.328				
28.35	29.87	1.52	0.003	0.015	0.013	0.01				
29.87	31.39	1.52	0.041	0.052	0.112	0.068				
31.39	33	1.61	0.04	0.113	0.004	0.052				
33	35	2	0.006	0.044	-0.007	0.014				
35	37	2	0.027	-0.007	0.015	0.012				
37	39	2	0.139	0.008	0.031	0.059				
39	41	2	0.023	0.013	0.137	0.058				
41	43	2	0.044	0.11	0	0.051				
43	45	2	0.001	0.171	0.122	0.098	SI	LD	26/08/2013	
45	47	2	0	0.01	0.027	0.012	SI	LD	26/08/2013	
47	49	2	0.024	0.034	0.004	0.021	SI	LD	26/08/2013	
49	51	2	0.006	0.019	0.007	0.011	SI	LD	26/08/2013	
51	53	2	0.026	0.014	0.028	0.023	SI	LD	26/08/2013	
53	54.4	1.4	0.123	0.779	0.001	0.301	SI	LD	26/08/2013	
54.4	55.78	1.38	0.001	0.034	0	0.012	SI	LD	26/08/2013	
55.78	57.2	1.42	0.11	0.021	0.219	0.117	SI	LD	26/08/2013	
57.2	59	1.8	0.021	0.011	0.017	0.016	SI	LD	26/08/2013	
59	61	2	0.017	0.01	0.03	0.019	SI	LD	26/08/2013	
61	63	2	0.045	0.022	0.035	0.034	SI	LD	26/08/2013	
63	65	2	0.215	0.186	0.054	0.152	SI	LD	26/08/2013	
65	67	2	0.055	0.006	0.006	0.022	SI	LD	26/08/2013	
67	69	2	0.001	0	0.039	0.013	SI	LD	26/08/2013	
69	71	2	0.068	0.023	0	0.03	SI	LD	26/08/2013	
71	73	2	0.005	0.021	0	0.009	SI	LD	26/08/2013	
73	75	2	0.029	0.009	0.004	0.014	SI	LD	26/08/2013	

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From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
75	77	2	0.006	0.115	0.004	0.042	SI	LD	26/08/2013	
77	79.25	2.25	0.251	0.013	0.051	0.105	SI	LD	26/08/2013	
79.25	80.5	1.25	0.342	0.335	0.636	0.438	SI	LD	26/08/2013	
80.5	81.73	1.23	0.522	0.201	0.477	0.4	SI	LD	26/08/2013	
81.73	83	1.27	0.014	0.017	0.023	0.018	SI	LD	26/08/2013	
83	85	2	0.072	0.023	0.002	0.032	SI	LD	26/08/2013	
85	87	2	0.008	0.024	0.064	0.032	SI	LD	26/08/2013	
87	89	2	0.004	0.052	0.013	0.023	SI	LD	26/08/2013	
89	91	2	0.027	0	0.053	0.027	SI	LD	26/08/2013	
91	93	2	0.053	0.008	0.013	0.025	SI	LD	26/08/2013	
93	95	2	0.041	0.037	1.34	0.473	SI	LD	26/08/2013	
95	97	2	0.031	0.004	0.047	0.027	SI	LD	26/08/2013	
97	99	2	0.002	0.01	0.004	0.005	SI	LD	26/08/2013	
99	101	2	0.003	0.028	0.003	0.011	SI	LD	26/08/2013	
101	103	2	0.04	0.391	0.005	0.145	SI	LD	26/08/2013	
103	105	2	0.003	0.127	0.046	0.059	SI	LD	26/08/2013	
105	107.45	2.45	0.141	0.013	0.051	0.068	SI	LD	26/08/2013	
107.45	109	1.55	0.007	0.004	0.187	0.066	SI	LD	26/08/2013	
109	111	2	0.005	0.014	0.002	0.007	SI	LD	26/08/2013	
111	113	2	0.27	0.004	0.399	0.224	SI	LD	26/08/2013	
113	114.36	1.36	0.004	0.009	0.222	0.078	SI	LD	26/08/2013	
114.36	116	1.64	0.47	0.137	0.139	0.249	SI	LD	26/08/2013	
116	118	2	0.252	0.02	0.15	0.141	SI	LD	26/08/2013	
118	120	2	0.002	0.013	0.01	0.008	SI	LD	26/08/2013	
120	122	2	0.004	0	0.058	0.021	SI	LD	26/08/2013	
122	124	2	0.016	0.464	0.53	0.337	SI	LD	26/08/2013	
124	126	2	0.029	0.298	0.145	0.157	SI	LD	26/08/2013	
126	128	2	0.004	0.169	0.031	0.068	SI	LD	26/08/2013	
128	130	2	0.786	0.161	0.009	0.319	SI	LD	26/08/2013	
130	131.12	1.12	1.42	0.064	0.005	0.496	SI	LD	26/08/2013	
131.12	132.12	1	0.263	0.808	0.32	0.464	SI	LD	26/08/2013	
132.12	134	1.88	0.033	0.048	0.02	0.034	SI	LD	26/08/2013	
134	136	2	0.904	0.607	0.157	0.556	SI	LD	26/08/2013	
136	138	2	0.336	0.308	0.007	0.217	SI	LD	26/08/2013	
138	140	2	0.045	0.007	0.007	0.02	SI	LD	26/08/2013	
140	141.73	1.73	0.004	0.009	0.34	0.118	SI	RC	27/08/2013	
141.73	143	1.27	-10	0.004	0.514	-3.161	SI	RC	27/08/2013	
143	144.17	1.17	-0.004	-0.004	-0.012	-0.007	SI	RC	27/08/2013	
144.17	145.16	0.99	0.111	0.116	0.121	0.116	SI	RC	27/08/2013	

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From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
145.16	147	1.84	0.026	0.015	0.282	0.108	SI	RC	27/08/2013	
147	149	2	0.315	-0.004	-0.004	0.102	SI	RC	27/08/2013	
149	151	2	0.22	0.18	0.028	0.143	SI	RC	27/08/2013	
151	152.33	1.33	0.148	0.021	0.162	0.11	SI	RC	27/08/2013	
152.33	153.62	1.29	0	0.507	0.012	0.173	SI	RC	27/08/2013	
153.62	155.7	2.08	0.012	0.015	0	0.009	SI	RC	27/08/2013	
155.7	158	2.3	0.013	0.003	0.187	0.068	SI	RC	27/08/2013	
158	160	2	0.052	0.03	0.031	0.038	SI	RC	27/08/2013	
160	162	2	0.016	0.024	0.285	0.108	SI	RC	27/08/2013	
162	164	2	0.022	0.035	0.025	0.027	SI	RC	27/08/2013	
164	166	2	0.003	0.018	0.01	0.01	SI	RC	27/08/2013	
166	168	2	0.022	0.066	0.041	0.043	SI	RC	27/08/2013	
168	170	2	0.013	0.331	0.206	0.183	SI	RC	27/08/2013	
170	172	2	0.016	0.14	0.132	0.096	SI	RC	27/08/2013	
172	174	2	0.176	0.155	0.32	0.217	SI	RC	27/08/2013	
174	176	2	0.009	0.023	0.021	0.018	SI	RC	27/08/2013	
176	178	2	0.003	0.024	0.01	0.012	SI	RC	27/08/2013	
178	180	2	0.012	0.002	0.236	0.083	SI	RC	27/08/2013	
180	181.7	1.7	-0.177	0.004	0.009	-0.055	SI	RC	27/08/2013	
181.7	183	1.3	0.002	0.014	-0.007	0.003	SI	RC	27/08/2013	
183	185	2	0.001	0.004	0.01	0.005	SI	RC	27/08/2013	
185	187	2	0.168	-0.009	0.114	0.091	SI	RC	27/08/2013	
187	189	2	0.04	0.003	0	0.014	SI	RC	27/08/2013	
189	191	2	0.103	0.1	0.304	0.169	SI			
191	193	2	0.056	0.1	0.87	0.342				
193	195.59	2.59	0.013	0.06	0.002	0.025				
195.59	197.59	2	0.148	0.124	0.997	0.423				
197.59	199.16	1.57	0.016	0.016	0.012	0.015				
199.16	201	1.84	0.239	0.049	0.009	0.099				
201	203	2	-0.002	0.023	0.017	0.013				
203	205	2	0.017	0.491	0.028	0.179				
205	207	2	0.141	-0.007	0.178	0.104				
207	209	2	0.005	0.061	-0.001	0.022				
209	211	2	0.013	0.013	0.009	0.012				
211	213	2	0.013	0.017	0.254	0.095				
213	215	2	0.013		0.254	0.005				
215	217	2	0.1	0.283	-0.008	0.125				
217	219.56	2.56	0.134	0.007	0.186	0.109				
219.56	221.56	2	0.142	0.007	-0.008	0.047				

Hole ID: **ORO13-11**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
221.56	223.56	2	0	0.009	0.004	0.004				
223.56	225.35	1.79	0.221	0.033	0.021	0.092				
225.35	227	1.65	-0.002	-0.001	0.016	0.004				
227	229	2	0	0.16	0.003	0.054				
229	231	2	0.014	-0.005	0	0.003				
231	233	2	0.002	0.206	0.007	0.072				
233	235	2	0.002	0.013	0.003	0.006				
235	236.7	1.7	0.003	0.009	0	0.004				
236.7	237.8	1.1	0.023	0.009	0.013	0.015				
237.8	239.54	1.74	0.027	0.018	0.021	0.022				
239.54	241	1.46	-0.037	0.009	0.176	0.049				
241	243	2	0.334	0.134	0.014	0.161				
243	245	2	0.04	0.441	0.23	0.237				
245	247	2	0.166	0.101	0.291	0.186				
247	249	2	0.348	0.051	0.256	0.218				
249	251	2	0.019	0.195	0.192	0.135				
251	253	2	0.104	0.255	0.029	0.129				
253	255	2	0.154	0.104	0.122	0.127				
255	257	2	0.002	0	0.012	0.005				
257	258.47	1.47	0.004	0.006	0.001	0.004				EOH

GeoSpark Logger Print Logs ~ DH Samples

DataSet: ORO_GF

Hole ID: ORO13-11

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
10.01	11.58	Q187133	HC	LD	☐	
11.58	12.35	Q187134	HC	LD	☐	
12.35	13.71	Q187135	HC	LD	☐	
13.71	15.24	Q187136	HC	LD	☐	0.49m recovered
15.24	16.15	Q187137	HC	LD	☐	
16.15	17.68	Q187138	HC	LD	☐	
17.68	19.75	Q187139	HC	LD	☐	
19.75	20.73	Q187141	HC	LD	☐	
20.73	22.23	Q187142	HC	LD	☑	
22.23	25.3	Q187143	HC	LD	☐	0.85m recovery
25.3	26.82	Q187144	HC	LD	☑	0.9m recovery
26.82	28.35	Q187146	HC	LD	☐	
28.35	29.87	Q187147	HC	LD	☐	
29.87	31.39	Q187148	HC	LD	☐	0.55m recovery
31.39	33	Q187149	HC	LD	☐	
33	35	Q187151	HC	LD	☐	
35	37	Q187152	HC	LD	☐	
37	39	Q187153	HC	LD	☐	
39	41	Q187154	HC	LD	☐	
41	43	Q187155	HC	LD	☐	
43	45	Q187156	HC	LD	☑	
45	47	Q187157	HC	LD	☐	
47	49	Q187158	HC	LD	☐	
49	51	Q187159	HC	LD	☐	
51	53	Q187161	HC	LD	☐	
53	54.4	Q187162	HC	LD	☑	
54.4	55.78	Q187163	HC	LD	☐	
55.78	57.2	Q187164	HC	LD	☐	
57.2	59	Q187165	HC	LD	☐	
59	61	Q187166	HC	LD	☐	
61	63	Q187167	HC	LD	☐	
63	65	Q187168	HC	LD	☐	
65	67	Q187169	HC	LD	☐	
67	69	Q187171	HC	LD	☐	
69	71	Q187172	HC	LD	☑	
71	73	Q187174	HC	LD	☑	
73	75	Q187175	HC	LD	☐	

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-11**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
75	77	Q187176	HC	LD	☐	
77	79.25	Q187177	HC	LD	☐	
79.25	80.5	Q187178	HC	LD	☐	
80.5	81.73	Q187179	HC	LD	☐	
81.73	83	Q187181	HC	LD	☐	
83	85	Q187182	HC	LD	☑	
85	87	Q187183	HC	LD	☐	
87	89	Q187184	HC	LD	☐	
89	91	Q187185	HC	LD	☐	
91	93	Q187186	HC	LD	☑	
93	95	Q187187	HC	LD	☐	
95	97	Q187188	HC	LD	☐	
97	99	Q187189	HC	LD	☐	
99	101	Q187191	HC	LD	☐	
101	103	Q187192	HC	LD	☐	
103	105	Q187193	HC	LD	☐	
105	107.45	Q187194	HC	LD	☐	
107.45	109	Q187195	HC	LD	☐	
109	111	Q187196	HC	LD	☐	
111	113	Q187197	HC	LD	☐	
113	114.36	Q187198	HC	LD	☐	
114.36	116	Q187199	HC	LD	☐	
116	118	Q187201	HC	LD	☑	
118	120	Q187203	HC	LD	☐	
120	122	Q187204	HC	LD	☐	
122	124	Q187205	HC	LD	☐	
124	126	Q187206	HC	LD	☐	
126	128	Q187207	HC	LD	☐	
128	130	Q187208	HC	LD	☐	
130	131.12	Q187209	HC	LD	☐	
131.12	132.12	Q187211	HC	LD	☐	
132.12	134	Q187212	HC	LD	☐	
134	136	Q187213	HC	LD	☐	
136	138	Q187214	HC	LD	☐	
138	140	Q187215	HC	LD	☐	
140	141.73	Q187216	HC	RC	☐	
141.73	143	Q187217	HC	RC	☐	
143	144.17	Q187218	HC	RC	☐	
144.17	145.16	Q187219	HC	RC	☐	

Hole ID: **ORO13-11**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
145.16	147	Q187221	HC	RC	☐	
147	149	Q187222	HC	RC	☐	
149	151	Q187223	HC	RC	☐	
151	152.33	Q187224	HC	RC	☐	
152.33	153.62	Q187225	HC	RC	☐	
153.62	155.7	Q187226	HC	RC	☐	
155.7	158	Q187227	HC	RC	☐	
158	160	Q187228	HC	RC	☑	
160	162	Q187231	HC	RC	☐	
162	164	Q187232	HC	RC	☐	
164	166	Q187233	HC	RC	☐	
166	168	Q187234	HC	RC	☐	
168	170	Q187235	HC	RC	☑	
170	172	Q187236	HC	RC	☐	
172	174	Q187237	HC	RC	☐	
174	176	Q187238	HC	RC	☑	
176	178	Q187239	HC	RC	☐	
178	180	Q187241	HC	RC	☐	
180	181.7	Q187242	HC	RC	☐	
181.7	183	Q187243	HC	RC	☐	
183	185	Q187244	HC	RC	☐	
185	187	Q187245	HC	RC	☐	
187	189	Q187246	HC	RC	☐	
189	191	Q187247	HC	RC	☐	
191	193	Q187248	HC	RC	☐	
193	195.59	Q187249	HC	RC	☐	
195.59	197.59	Q187251	HC	RC	☐	
197.59	199.16	Q187252	HC	RC	☐	
199.16	201	Q187253	HC	RC	☐	
201	203	Q187254	HC	RC	☐	
203	205	Q187255	HC	RC	☐	
205	207	Q187256	HC	RC	☑	
207	209	Q187258	HC	RC	☐	
209	211	Q187259	HC	RC	☐	
211	213	Q187261	HC	RC	☐	
213	215	Q187262	HC	RC	☐	
215	217	Q187263	HC	RC	☐	
217	219.56	Q187264	HC	RC	☐	
219.56	221.56	Q187265	HC	RC	☐	

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-11**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
221.56	223.56	Q187266	HC	RC	☐	
223.56	225.35	Q187267	HC	RC	☐	
225.35	227	Q187268	HC	RC	☐	
227	228	Q187269	HC	RC	☐	
228	231	Q187271	HC	RC	☑	
231	233	Q187272	HC	RC	☐	
233	235	Q187273	HC	RC	☐	
235	236.7	Q187274	HC	RC	☐	
236.7	237.8	Q187275	HC	RC	☐	
237.8	239.54	Q187276	HC	RC	☐	
239.54	241	Q187277	HC	RC	☐	
241	243	Q187278	HC	RC	☐	
243	245	Q187279	HC	RC	☐	
245	247	Q187281	HC	RC	☐	
247	249	Q187282	HC	RC	☐	
249	251	Q187283	HC	RC	☐	
251	253	Q187284	HC	RC	☐	
253	255	Q187285	HC	RC	☐	
255	257	Q187286	HC	RC	☐	
257	258.47	Q187287	HC	RC	☐	END OF HOLE

GeoSpark Logger Print Logs ~ Duplicate Samples

DataSet: ORO_GF

Hole ID: ORO13-11

From (m)	To (m)	Sample ID	Original Sample ID	QC Category	Comments
20.73	22.23	Ch:Q187142	Q187142	LABCHCK	
25.3	26.82	Q187145	Q187144	FD	
43	45	Ch:Q187156	Q187156	LABCHCK	
53	54.4	Ch:Q187162	Q187162	LABCHCK	
69	71	Q187173	Q187172	FD	
71	73	Ch:Q187174	Q187174	LABCHCK	
83	85	Ch:Q187182	Q187182	LABCHCK	
91	93	Pd:Q187186	Q187186	PREPCHK	
116	118	Q187202	Q187201	FD	
158	160	Q187229	Q187228	FD	
168	170	Ch:Q187235	Q187235	LABCHCK	
174	176	Pd:Q187238	Q187238	PREPCHK	
205	207	Q187257	Q187256	FD	
228	231	Ch:Q187271	Q187271	LABCHCK	

GOLD FIELDS

GeoSpark Logger Print Logs ~ Standards / Blanks

DataSet: **ORO_GF**

Hole ID: **ORO13-11**

Sample ID	Standard ID	Comments
Q187140	CDN-CM-25	
Q187150	FB	
Q187160	CDN-GS-P6	
Q187170	FB	
Q187180	CDN-CM-25	
Q187190	FB	
Q187200	CDN-GS-P6	
Q187210	FB	
Q187220	CDN-GS-P6	
Q187230	FB	
Q187240	CDN-GS-5L	
Q187250	FB	
Q187260	CDN-GS-P6	
Q187270	FB	
Q187280	CDN-CM-25	

Gold Fields Selwyn – Quicklog 2013

<table>
<tr><td>Hole no: ORO13-12
Logged By: TimStubley</td><td>Az: 045</td><td>Dip: -50</td><td>Target depth: 250</td><td colspan="2">EOH: 227.99 m</td></tr>
<tr><td>Start date: August 27, 2013</td><td>End date: August 31, 2013</td><td>Pad: ORO13-Z</td><td>E: 405287</td><td>N: 7020296</td><td>Elevation: 1410 m</td></tr>
<tr><td colspan="3">Target: Golden Ridge: Designed to intersect silica - facies and carbonate facies chert pebble conglomerates and a felsic dyke. Targets FeCarb alteration mapped on surface, and drills towards an anomalous high Au soil geochem polygon. Designed as a lower elevation late season alternative to ORO13-X, which was set up to drill the same section but within the high Au soil zone.</td><td colspan="3">Target explained? The carbonate facies chert pebble conglomerate observed in ORO13-12 appears to be a patchy infill texture, most common within and proximal to faults. The degree of FeCarb and FeOx alteration is very weak compared to the rusty red weathered carbonate facies conglomerate mapped on surface, and does not appear to be of economic significance. The felsic dyke mapped on surface was not intersected.</td></tr>
<tr><td colspan="6">Summary:
Location: ORO13-12 drills into a steep south facing ridge slope ~ 900 m SE of ORO13-11.
Lithology: Overburden to 7.01 m. ORO13-12 intersects an upward fining polymictic chert, mudstone and pyrite pebble conglomerate sequence ranging from massive matrix supported conglomerate beds through graded pebble to granular sandstone beds, and laminated to massive siltstone. Between 84 m and 122 m patchy Fe carbonate flooding occurs within the matrix, possibly marking a transition to the ‘carbonate facies’ conglomerate. Fe carbonate fills all interstitial space between grains from 122 – 127.03 m, but becomes weak and patchy to 167.03 m, only occurring in and around faults. From 167.03 m to EOH at 227.99, silica facies carbonate is dominant, with only rare patchy carbonate in the matrix.
Alteration: Fe carbonate alteration occurs dominantly as veins within fault zones, and patchy pervasive cement proximal to faults. FeCarb alteration is most common between 84 and 127.05 m.
Mineralization: Pyrite occurs throughout ORO13-12, most typically as clasts of massive pyrite, or mudstone containing up to 80% disseminated pyrite. Locally, pyrite appears to be remobilised out of clasts, as aggregates appear in the matrix adjacent to thin veinlets within cracked pyrite clasts.
Interpretation/Comments: The carbonate facies chert pebble conglomerate observed in ORO13-12 appears to be a patchy infill texture, most common within and proximal to faults. The degree of FeCarb and FeOx alteration is very weak compared to the rusty red weathered carbonate facies conglomerate mapped on surface, and does not appear to be of economic significance, however due to late season weather and safety concerns ORO13-12 was situated in a sub-optimal position with relation to the high Au soil anomaly. The original target (Proposed Pad ORO13-X) is still considered viable at this time.</td></tr>
</table>

Shift	**From**	**To**	**Comments**
Aug 27-28/13 0 – 67.22 m	**0**	**7.01**	**Overburden**
	7.01	**15.24**	**Chert pebble conglomerate – silica facies (qChPc)** Pebble conglomerate: subangular to rounded clasts of light grey massive to laminated chert (60%), black mudstone (35%) and massive pyrite (or pyrite saturated siltstone 5%) in a coarse sandy matrix. Upward fining sequence grades from clast supported pebbles and rare cobbles, to matrix supported pebbles, then granular coarse sand through to laminated siltstone.

			Common fractures and gravel/sand/clay- filled 'voids'. Core is blocky and recovery is poor. Strong FeOx alteration coats/fills fractures and permeates along joints and quartz veins <1mm, oriented ~15- 20°tca. Pyrite occurs as fine dissemination within clasts, aggregates rimming clast boundaries, and as nodules within matrix. Nodular pyrite more common within siltstone horizons **Py ~3%**
	15.24	**16.15**	**NO CORE** **No core recovered**
	16.15	**61.8**	**Chert pebble conglomerate – silica facies (qChPc)** Pebble conglomerate: subangular to rounded clasts of light grey massive to laminated chert (60%), black mudstone (35%) and massive pyrite (or pyrite saturated siltstone 5%) in a coarse sandy matrix. Upward fining sequence grades from clast supported pebbles and rare cobbles, to matrix supported pebbles, then granular coarse sand through to laminated siltstone. Common fractures and gravel/sand/clay- filled 'voids'. Core is blocky and recovery is poor. Strong FeOx alteration coats/fills fractures and permeates along joints and quartz veins <1mm, oriented ~15- 20°tca. Pyrite occurs as fine dissemination within clasts, aggregates rimming clast boundaries, and as vug-fill aggregates within matrix. Local aggregate pyrite appears to partially replace clasts. Nodular pyrite is common within siltstone horizons. **Py ~3%**
	61.8	**66.45**	**Siltstone (ShArSi)** Fine- grained massive to laminated (40°), poorly sorted gritty siliceous siltstone overlies conglomerate (part of upwards fining succession). Common FeOx altered gouge and rubble filled faults. Nodular and disseminated pyrite. **Py ~2%**
	66.45	**74.07**	**Chert pebble conglomerate – silica facies (qChPc)** Pebble conglomerate: subangular clasts of light grey massive to laminated chert (60%), black mudstone (35%) and massive pyrite (or pyrite saturated siltstone 5%) in a coarse sandy matrix. FeOx alteration on fracture planes. Local quartz veins <2mm ~20 - 50°tca. Aggregate pyrite appears to partially replace clasts. **Py ~5%**
Aug 29/13 67.22 – 123.77 m	**74.07**	**84**	**Chert pebble conglomerate – silica facies: Sheared and faulted (qChPc)** Pebble conglomerate: subangular clasts of light grey massive to laminated chert (60%), black mudstone (35%) and massive pyrite (or pyrite saturated siltstone 5%) in a coarse sandy matrix. Common shearing ~10 – 30° tca, local gouge, and zones of quartz-healed tectonised conglomerate. Possible serpentenite (or similar):

			translucent green, soapy fibrous buildup, associated locally with white, paper-like fibrous mat. Quartz±FeCarb veins fill fractures locally. Minor disseminated pyrite. **Py ~1%**
	84	**122**	**Chert pebble conglomerate: Transition to carbonate facies? (qChPc, icChPc)** Pebble conglomerate: subangular to rounded clasts of light grey massive to laminated chert (63%), black mudstone (35%) and massive pyrite (or pyrite saturated siltstone 2%) in a coarse sandy matrix. Matrix supported with interbedded zones of coarse sand to granule sized sandstone. Common faulting, partially Quartz±FeCarb vein healed. Local zones of FeCarb alteration, creamy dun-coloured ankerite/siderite floods matrix of conglomerate proximal to faulting. Rare clasts may be replaced by FeCarb. Weakly disseminated pyrite throughout. **Py ~1%**
	122	**127.03**	**Chert pebble conglomerate- carbonate facies (icChPc)** Matrix supported pebble conglomerate: subangular to rounded clasts of light grey massive to laminated chert (63%), black mudstone (35%) and massive pyrite (or pyrite saturated siltstone 2%). All interstitial space between sand sized grains filled with FeCarb, possibly flooding from faulted upper contact (~35°). Weakly disseminated pyrite occurs throughout interval. **Py ~1%**
Aug 30/13 123.77 - 184.33 Aug 31/13 184.33 – 227.99 EOH	**127.03**	**167.03**	**Chert pebble conglomerate – silica facies (qChPc), rare patchy carbonate alteration** Matrix supported pebble conglomerate: subangular to rounded clasts of light grey massive to laminated chert (60%), black mudstone (35%) and massive pyrite (or pyrite saturated siltstone 5%). Rare individual feldspar-phyric black igneous clasts. Common shearing ~ 5- 30°tca, local fault gouge and brecciated zones. Subhedral Fecarb veins, 5-30° tca, <5mm partially heal fractures, may be associated with blue-greenish to white fibrous ‘mat’. Patchy local carbonate alteration in matrix. Rare pyrite aggregates in matrix. **Py ~2%**
	167.03	**227.99**	**Chert pebble conglomerate – silica facies (qChPc), rare patchy carbonate alteration** Matrix supported pebble conglomerate: subangular to rounded clasts of light grey massive to laminated chert (60%), black mudstone (35%) and massive pyrite (or pyrite saturated siltstone 5%). Rare quartz±FeCarb veins, ~15° tca, <7mm. Patchy local carbonate alteration in matrix. Rare pyrite aggregates in matrix, remobilised pyrite appears to fill fractures within primary pyrite-bearing clasts.

			Py~2%

GeoSpark Logger Print Logs ~ Collars

DataSet: **ORO_GF**

Hole: ORO13-12

Depth (m)	Hole Type	Core Diamete	Grid ID	East	North	Elevation	Survey Method	Survey Date	Survey By	Date Started	Date Completed	Logged By	Prospect	Validated By
227.99 m	DD	HQ/NQ	UTM09N_NAD83	405287	7020296	1410	GPS	26/08/2013	LD	27/08/2013	31/08/2013	TimS	Golden Hinge	

GeoSpark Logger Print Logs ~ DH Surveys

DataSet: ORO_GF

Hole ID: ORO13-12

Depth (m)	Survey Method	Grid ID	Dip	Surv. Tool Azimuth	Magnetic Declination	Corrected Azimuth	Magnetics	Date Surveyed	Survey Instrument	Bad Reading	Comments
0	COLL	UTM09N_NAD83	-50	45	0	45		27/08/2013	CMP	☐	
61.87	EZ Shot	UTM09N_NAD83	-50.6	27.4	22.5	49.9		29/08/2013	EZ	☐	
124.36	EZ Shot	UTM09N_NAD83	-50	27.8	22.5	50.3		29/08/2013	EZ	☐	
185.32	EZ Shot	UTM09N_NAD83	-48.7	29.5	22.5	52		30/08/2013	EZ	☐	
227.99	EZ Shot	UTM09N_NAD83	-47.7	30.4	22.5	52.9		31/08/2013	EZ	☐	

Gold Fields Canada

Signed: ______________

DataSet: ORO_GF

Hole ID: ORO13-12

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	0	7.01	Overburden	Overburden (OB)	

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	7.01	15.24	Conglomerate	Chert pebble conglomerate (silicate facies)	Subang - rnd clasts lt gry mass - lam chert (60%), blk mst (35%), and mass py (5%) in a cg sand mtx. Upwd fine seq grades from cob-silt. Comn frac/voids w/ grav/clay infill. S Fe alt'd frac + jnts. Qtz vns<1mm ~20°tca. Agg + dis Py may repl local clasts.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	7.01	15.24	Py	3	REPL										Pyrite occurs as fine dissemination within clasts, aggregates rimming clast boundaries, and as nodules within matrix. Nodular pyrite more common within siltstone horizons

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	7.01	15.24	VQtz	±hem	0.5										Strong FeOx alteration coats/fills fractures and permeates along joints and quartz veins <1mm, oriented ~15- 20°tca.

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	7.01	8.35	RUB	S	
	8.35	8.7	FRAC		
	8.7	9.5	RUB	S	
	14.85	15.24		VS	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	15.24	16.15	No Core/Chips recovery	No Core Recovered	No core

Gold Fields Canada

Signed: _______________

DataSet: ORO_GF

Hole ID: ORO13-12

Alteration:	**From (m)**	**To (m)**	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments
Minerals:	**From (m)**	**To (m)**	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
Veining:	**From (m)**	**To (m)**	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
Structure:	**From (m)**	**To (m)**	Type	Intensity	CA Angle										

	From (m)	**To (m)**	**GF Lith**	**Local Lith**	**Description**
LITHO	16.15	61.8	Conglomerate	Chert pebble conglomerate (silicate facies)	Subang - rnd clasts lt gry mass - lam chert (60%), blk mst (35%), and mass py (5%) in a cg sand mtx. Upwd fine seq grades from cob-silt. Comn frac/voids w/ grav/clay infill. S Fe alt'd frac + jnts. Qtz vns<1mm ~20°tca. Agg + dis Py may repl local clasts.

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DataSet: **ORO_GF**

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Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
16.15	61.8	Py	3	REPL										Pyrite occurs as fine dissemination within clasts, aggregates rimming clast boundaries, and as vug-fill aggregates within matrix. Local aggregate pyrite appears to partially replace clasts. Nodular pyrite is common within siltstone horizons.

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
16.15	61.8	VQtz	±hem	0.5										Strong FeOx alteration coats/fills fractures and permeates along joints and quartz veins <1mm, oriented ~15- 20°tca.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
16.15	17.27	RUB	VS	
19.5	19.51	FRAC	M	10
21.25	21.26			15
21.45	21.46	FLT		40
24.38	26.66	RUB	S	
26.66	26.78	FLTG	VS	
28.3	29.2	RUB	S	
32.92	33.3			
34.48	34.49	FRAC		40
34.76	34.77			30
37	37.01		S	
39.2	39.25	FLT	VS	
41.7	41.85		S	
44.1	44.13	FRAC		40
49.15	49.16			15
51	52.2	FLTG	VS	
52.45	52.5			25
53.7	53.8		S	
54.25	54.55	FLT		
54.85	55.2	RUB		
57.8	58.2	FLT		
58.2	59.8	RUB		

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	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	61.8	66.45	Siltstone - Cherty	shale argillite and siltstone	Fine- grained massive to laminated (40°), poorly sorted gritty siliceous siltstone overlies conglomerate (part of upwards fining succession). Common FeOx altered gouge and rubble filled faults. Nodular and disseminated pyrite. Py ~ 2%.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	61.8	66.45	Py	2	DIS										Nodular and disseminated pyrite. Py ~2%

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	61.87	62	RUB	S	
	64.8	65.6	FLT	VS	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	66.45	74.07	Conglomerate	Chert pebble conglomerate (silicate facies)	Subangular clasts of light grey mass to lam chert (60%), blk mst (35%) and mass py 5% in a cg sand mtx. FeOx alteration on fracture planes. Local quartz veins <2mm ~20 -50°tca. Aggregate pyrite appears to partially replace clasts.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	66.45	74.07	Py	5	REPL										Aggregate pyrite appears to partially replace clasts. Py ~5%

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	61.8	74.07	VQtz	n/a	0.5										rare quartz veins

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	69.05	69.2	FLT	M	
	72.19	72.24	FLTG	S	60
	73.9	74.07	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	74.07	84	Conglomerate	Fault breccia (UTB)	Pebble conglomerate: Common shears ~10 – 30° tca, local gouge,Qtz±FeCarb vn healed tectonised rock. Poss serpentenite: translucent grn, soapy fibrous buildup, assoc locally with white, paper-like fibrous mat.

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Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
75.1	75.35	FLT	M	
75.35	75.4	FLTBX		50
76	76.2	RUB	S	
77.25	78.55	FLTBX	M	
78.55	78.64	FLTG	S	
78.64	79	RUB		
79	80.75	FLTBX		
80.75	81	FLT		20
81	83.5	FLTBX		
83.5	83.7	FLTG		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	84	122	Conglomerate	Chert pebble conglomerate (silicate facies)	Poss transition to Carb facies conglom. Mtx supt w/ intrbds cg sand to gran. Quartz±FeCarb vns healshears; local zones of FeCarb alteration, creamy dun-coloured ankerite/siderite floods matrix of conglomerate proximal to faulting.

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Hole ID: **ORO13-12**

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
74.07	122	Py	1	DIS										Minor disseminated pyrite. Py ~1%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
74.07	123.07	VQCarb	±FeCarb	1										Quartz±FeCarb veins fill fractures locally. Common faulting, partially Quartz±FeCarb vein healed.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
84.73	85	FLT	S	10
87	87.01			
89.5	89.51			
94.15	94.38			30
97	97.2	RUB		
98.25	98.58			
104.26	104.35	FLTG		
106.88	106.95	FLTBX		
108.2	109	RUB		25
113.38	115.4	FLTBX	M	15
115.9	116.5			
117	117.1	FLTG	W	35
117.8	118		S	40
121.15	121.8	RUB		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	122	127.03	Conglomerate	chert pebble conglomerate (carbonate facies)	Mtx supt peb cong. Subang- rnd clasts chert, mudstone and rare shale. All intrstl space filled w/ FeCarb, poss flooding from flt'd upper contact (~35°). Wkly dis py th/out.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
122	127.03	Py	1	DIS										Weakly disseminated pyrite occurs throughout interval. Py ~1%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

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	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	127.03	167.03	Conglomerate	Chert pebble conglomerate (silicate facies)	Chert+mst +py peb conglom. Rare fldspr-phyric black igneous clasts.Comn shears, ~5-30°tca, locl gouge + flt brx zones. Subh FeCarb vns 5-30°tca, <5mm partially heal fracs, may be assoc w/ blue-grn to white fibrous mat. Patchy local carb alt.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	123.07	167.03	VQCarb	±FeCarb	2										Common shearing ~ 5- 30°tca, local fault gouge and brecciated zones. Subhedral Fecarb veins, 5-30° tca, <5mm partially heal fractures, may be associated with blue-greenish to white fibrous 'mat'.

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	128.32	128.5	RUB	S	
	130.3	130.6	FLTBX	M	40
	131	132	RUB	W	
	133	133.01	FRAC	S	25
	137.3	137.31		W	10
	139	139.01		S	5
	140.4	140.41			
	142.9	143.35	FLT	W	
	149	149.05		M	30
	149.26	149.7		S	25
	151.56	152.1		M	30
	153.5	153.51			15
	157	157.1	FRAC		
	158.2	158.21			10
	160.2	160.21			20
	160.4	160.43	FLT	S	35
	162	163	FRAC		25

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	167.03	227.99	Conglomerate	Chert pebble conglomerate (silicate facies)	Chert+mst+py peb conglom. Patchy locl FeCarb Alt'd mtx. Rare py agg in mtx, remob py appears to fill frac w/in 1ry py-bearing clasts. Rare quartz±FeCarb veins, ~15° tca, <7mm

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Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
127.03	227.99	Py	2	AGG										~5% of clasts contain abundant disseminated pyrite. Rare pyrite aggregates in matrix. 2ndry or remob Py may fill fractures in py bearing clasts. Py ~4%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
167.03	227.99	VQCarb	±FeCarb	0.5										Rare quartz±FeCarb veins, ~15° tca, <7mm.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
172.15	172.16	FLT	M	20
188.5	188.51	FRAC		15
192.1	192.11			20
195	195.01			
195.22	195.23			
195.4	195.41			40
196.58	196.6	FLT		60
203.4	203.41	FRAC		15
206.2	206.21			20
206.3	206.31			
206.4	206.41			
209.5	209.51			
218.25	218.26			15
225.85	225.86			

GeoSpark Logger Print Logs ~ Geotechnical

DataSet: ORO_GF

Hole ID: ORO13-12

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
7.01	8.35	1.34	0.76	56.7164	0	0	sli	30	30	VSTR	moslty rubble	
8.35	9.75	1.4	1.21	86.4286	0.22	15.71	sli	50	50	VSTR	includes ~30 cm sandy gravel	
9.75	10.97	1.22	0.71	58.1967	0	0	sli	21	21	VSTR	mostly broken rubble	
10.97	11.89	0.92	0.9	97.8261	0.34	36.96	sli	22	22	VSTR		
11.89	13.11	1.22	1.3	106.557	0.41	33.61	sli	50	50	VSTR	some rubble	
13.11	14.63	1.52	0.7	46.0526	0.18	11.84	sli	40	40	VSTR	some rubble	
14.63	15.24	0.61	0.45	73.7705	0	0	sli	50	50	VSTR	rubble with some sand gravel	
15.24	16.15	0.91	0	0	0	0					no core recovery	
16.15	17.37	1.22	0.75	61.4754	0	0	sli	100	100	VSTR	all rubble	
17.37	18.29	0.92	0.49	53.2609	0.21	22.83	sli	20	20	VSTR		
18.29	20.42	2.13	0.74	34.7418	0	0	sli	35	35	VSTR	some rubble	
20.42	21.95	1.53	1.28	83.6601	0.12	7.84	sli	44	44	VSTR	minor rubble	
21.95	23.47	1.52	1.36	89.4738	0.64	42.11	sli	35	35	VSTR		
23.47	24.38	0.91	0.34	37.3626	0.3	32.97	sli	15	15	VSTR		
24.38	25.3	0.92	0.18	19.5652	0	0	sli	15	15	VSTR	RUBBLE	
25.3	26.82	1.52	0.5	32.8947	0	0	mode	50	50	VSTR	rubble with about 10 cm sandy gravel	
26.82	28.35	1.53	0.6	39.2157	0	0	mode	50	50	VSTR	mostly rubble	
28.35	29.26	0.91	0.48	52.7473	0	0	sli	50	50	VSTR	mostly rubble	
29.26	30.48	1.22	1.18	96.7214	0.46	37.7	sli	55	55	VSTR	Minor rubble	
30.48	31.39	0.91	0.82	90.1099	0.49	53.85	sli	28	28	VSTR		
31.39	32.92	1.53	1.2	78.4314	0.61	39.87	sli	30	30	VSTR		
32.92	34.44	1.52	1.45	95.3947	0.49	32.24	sli	50	50	VSTR		
34.44	35.36	0.92	0.84	91.3042	0.22	23.91	sli	19	19	VSTR		
35.36	36.88	1.52	1.46	96.0526	0.87	57.24	sli	14	14	VSTR		
36.88	37.49	0.61	0.65	106.557	0.28	45.9	sli	10	10	VSTR		
37.49	39.01	1.52	1.52	100.000	1.31	86.18	sli	48	48	VSTR		
39.01	40.54	1.53	0.58	37.9084	0.22	14.38	mode	25	25	VSTR	minor sandy rubble	
40.54	42.06	1.52	1.24	81.5789	0.35	23.03	mode	50	50	VSTR		
42.06	43.59	1.53	1.28	83.6602	0.9	58.82	mode	35	35	VSTR		
43.59	44.81	1.22	1.03	84.4261	0.29	23.77	sli	32	32	VSTR		
44.81	46.33	1.52	1.48	97.3684	0.99	65.13	sli	19	19	VSTR		
46.33	46.63	0.3	0.19	63.3335	0	0	sli	5	5	VSTR		
46.63	48.16	1.53	1.43	93.4641	0.78	50.98	sli	24	24	VSTR		
48.16	49.68	1.52	1.46	96.0526	1.05	69.08	mode	30	30	VSTR		
49.68	51.21	1.53	0.91	59.4772	0	0	mode	35	35	VSTR	some rubble with about 10 cm sandy rubble	
51.21	52.73	1.52	0.88	57.8947	0.41	26.97	mode	35	35	VSTR	includes about 20 cm sandy mud-unconsolidated material	

GeoSpark Logger Print Logs ~ Geotechnical

Hole ID: **ORO13-12**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
52.73	54.25	1.52	1.3	85.5263	0.69	45.39	sli	50	50	VSTR	includes 5 cm sandy unconsolidated material	
54.25	54.85	0.6	0.36	60.0002	0.11	18.33	mode	25	25	VSTR	includes ~15 cm sandy gravel-unconsolidated material	
54.85	55.78	0.93	0.78	83.8709	0.1	10.75	sli	50	50	VSTR	1/3 rubble and ~5cm uncosolidated sandy gravel	
55.78	57.3	1.52	1.12	73.6842	0.4	26.32	sli	40	40	VSTR		
57.3	58.06	0.76	0.8	105.263	0	0	sli	50	50	VSTR	includes ~30 cm unconsolidated sandy gravel.	
58.06	58.83	0.77	0.5	64.9350	0	0	mode	50	50	VSTR	mostly rubble and minor unconsolidated sandy gravel.	
58.83	60.35	1.52	1.35	88.816	0.36	23.68	mode	100	100	VSTR	mostly rubble and minor unconsolidated sandy gravel.	
60.35	61.87	1.52	1.19	78.2895	0.86	56.58	sli	32	32	VSTR		
61.87	63.4	1.53	1.3	84.9672	0	0	sli	50	50	VSTR	includes ~10 cm uncosolidated sandy gravel to clay material	
63.4	64.92	1.52	0.9	59.2107	0.2	13.16	sli	40	40	VSTR	mostly rubble-minor unconsolidated sandyy clay	
64.92	66.45	1.53	1.25	81.6994	0.24	15.69	mode	50	50	VSTR	includes about 15 cm unconsolidated sandy clay to gravel	
66.45	67.97	1.52	1.4	92.105	0.4	26.32	sli	25	25	VSTR		
67.97	69.19	1.22	1.22	99.9999	0.83	68.03	sli	18	18	VSTR		
69.19	70.41	1.22	1.05	86.0655	0.76	62.3	sli	9	9	VSTR		
70.41	71.93	1.52	1.52	100.000	0.92	60.53	sli	21	21	VSTR		
71.93	73.15	1.22	1.22	99.9999	0.48	39.34	sli	31	31	VSTR		
73.15	74.07	0.92	0.72	78.2610	0.21	22.83	sli	20	20	VSTR		
74.07	75.29	1.22	0.95	77.8688	0	0	sli	40	40	VSTR		
75.29	76.2	0.91	0.9	98.9015	0	0	mode	30	30	VSTR		
76.2	78.64	2.44	2.02	82.7868	0.98	40.16	sli	50	50	VSTR		Begin NQ core - reduced from HQ at 76.2 m
78.64	81.69	3.05	2.25	73.7704	0.44	14.43	mode	60	60	VSTR	labundant white quartz veinlets	
81.69	84.73	3.04	2.78	91.4473	0.65	21.38	mode	70	70	VSTR	quite broken with rubble sections	
84.73	87.78	3.05	3.02	99.0165	0.71	23.28	mode	40	40	VSTR		
87.78	90.83	3.05	3.05	99.9999	0.58	19.02	sli	37	37	VSTR		
90.83	93.88	3.05	3	98.3608	1.33	43.61	sli	40	40	VSTR		
93.88	96.93	3.05	2.94	96.3934	1.64	53.77	mode	33	33	VSTR		
96.93	99.97	3.04	2.87	94.4079	0.76	25	mode	45	45	VSTR		
99.97	103.02	3.05	3.05	100.000	0.99	32.46	mode	40	40	VSTR		
103.02	106.07	3.05	2.85	93.4425	0.9	29.51	sli	45	45	VSTR		
106.07	109.12	3.05	2.82	92.4589	1.05	34.43	mode	60	60	VSTR		
109.12	112.19	3.07	2.82	91.8567	1.18	38.44	mode	47	47	VSTR		
112.19	115.21	3.02	2.9	96.0266	0.58	19.21	mode	45	45	VSTR		

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From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
115.21	118.26	3.05	2.3	75.4098	0.5	16.39	mode	50	50	STR	local matrix dissolution with weak clay alt	
118.26	121.31	3.05	3	98.3608	1.05	34.43	mode	50	50	VSTR		
121.31	124.36	3.05	2.77	90.8196	0.43	14.1	sli	60	60	VSTR	some broken fault zones at top	
124.36	127.41	3.05	2.98	97.7048	1.22	40	sli	19	19	VSTR		
127.41	128.32	0.91	0.83	91.2084	0.18	19.78	sli	10	10	VSTR		
128.32	130.45	2.13	2.1	98.5920	0.35	16.43	sli	70	70	VSTR		
130.45	133.5	3.05	2.35	77.0491	0.14	4.59	sli	70	70	VSTR		
133.5	136.55	3.05	3.05	99.9999	1.78	58.36	sli	36	36	VSTR		
136.55	136.86	0.31	0.31	100.001	0.17	54.84	sli	2	2	VSTR		
136.86	139.6	2.74	2.66	97.0801	0.67	24.45	sli	24	24	VSTR		
139.6	142.65	3.05	3.05	100.000	1.36	44.59	sli	37	37	VSTR		
142.65	145.69	3.04	2.83	93.0918	1.59	52.3	sli	42	42	VSTR		
145.69	148.74	3.05	2.82	92.4589	1.46	47.87	sli	40	40	VSTR		
148.74	151.79	3.05	2.82	92.4594	0.51	16.72	sli	80	80	VSTR	includes fault zone; lots of rubbl	
151.79	154.84	3.05	2.65	86.8852	0.25	8.2	sli	38	38	VSTR	some fatul zone at top	
154.84	157.89	3.05	2.8	91.8032	0.63	20.66	sli	40	40	VSTR		
157.89	160.93	3.04	2.9	95.395	1.33	43.75	sli	28	28	VSTR		
160.93	163.98	3.05	2.96	97.0491	0.476	15.61	sli	38	38	VSTR		
163.98	167.03	3.05	2.95	96.7212	0.89	29.18	sli	35	35	VSTR		
167.03	170.08	3.05	3.1	101.639	2.78	91.15	sli	4	4	VSTR		
170.08	172.52	2.44	2.23	91.3934	0.94	38.52	non	7	7	VSTR		
172.52	173.13	0.61	0.67	109.836	0.67	109.84	non	1	1	VSTR		
173.13	176.17	3.04	3.02	99.3423	2.82	92.76	non	9	9	VSTR		
176.17	179.22	3.05	2.97	97.377	2.34	76.72	non	7	7	VSTR		
179.22	182.27	3.05	3.05	99.9999	2.9	95.08	non	8	8	VSTR		
182.27	185.32	3.05	3.05	99.9999	2.89	94.75	non	8	8	VSTR		
185.32	187.15	1.83	1.83	100.001	1.7	92.9	non	4	4	VSTR		
187.15	188.37	1.22	1.22	99.9999	1.22	100	non	1	1	VSTR		about 65 c of settled cuttings between at 187.15 not included in logging or sampling
188.37	188.67	0.3	0.29	96.6657	0	0	non	2	2	VSTR		
188.67	191.41	2.74	2.86	104.379	2.57	93.8	non	6	6	VSTR		
191.41	194.46	3.05	3.05	99.9999	2.51	82.3	non	17	17	VSTR		
194.46	197.51	3.05	2.97	97.3774	0.95	31.15	sli	30	30	VSTR		
197.51	200.56	3.05	3.05	99.9999	2.65	86.89	sli	9	9	VSTR		
200.56	203.61	3.05	3.05	99.9999	2.58	84.59	sli	11	11	VSTR		
203.61	206.65	3.04	3.05	100.329	2.35	77.3	sli	12	12	VSTR		
206.65	209.7	3.05	3.05	99.9999	2.14	70.16	sli	8	8	VSTR		
209.7	212.75	3.05	3.05	99.9999	3.05	100	non	5	5	VSTR		
212.75	215.8	3.05	3.05	99.9999	3.05	100	non	3	3	VSTR		

Hole ID: **ORO13-12**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
215.8	218.85	3.05	3.05	99.9999	1.7	55.74	non	9	9	VSTR		
218.85	221.89	3.04	3.05	100.329	2.89	95.07	non	0	0	VSTR		
221.89	224.94	3.05	3.05	99.9999	2.7	88.52	non	2	2	VSTR		
224.94	227.99	3.05	3.05	99.9999	2.65	86.89	non	3	3	VSTR		

GeoSpark Logger Print Logs ~ Mag Susceptibility

DataSet: ORO_GF

Hole ID: ORO13-12

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
7.01	8.35	1.34	0.017	0.017	0.014	0.016				
8.35	9.75	1.4	0.017	0.179	0.005	0.067				
9.75	10.97	1.22	0.041	0.148	0.01	0.066				
10.97	11.89	0.92	0.095	0.115	0.008	0.073				
11.89	13.11	1.22	0.011	0.022	0.012	0.015				
13.11	14.63	1.52	0.039	0.004	0.012	0.018				
14.63	15.24	0.61	0.033	0.012	0.053	0.033				
16.15	17.37	1.22	0.018	0.013	0.035	0.022				
17.37	18.29	0.92	0.008	0.185	0.008	0.067				
18.29	19.2	0.91	0.015	0.014	0.005	0.011				
19.2	20.42	1.22	-0.144	0.008	0.007	-0.043				
20.42	21.95	1.53	0.005	-0.01	0.007	0.001				
21.95	23.47	1.52	0.019	0.111	0.112	0.081				
23.47	24.38	0.91	0.055	0.109	0.063	0.076				
24.38	25.3	0.92	0.018	0.035	0.14	0.064				
25.3	26.82	1.52	0.078	0.117	0.018	0.071				
26.82	28.35	1.53	0.018	0.431	0.021	0.157				
28.35	29.26	0.91	0.049	0.022	0.051	0.041				
29.26	30.48	1.22	0.007	0.014	0.04	0.02				
30.48	31.39	0.91	0.018	0.015	0.044	0.026				
31.39	32.92	1.53	0	0.008	-0.003	0.002				
32.92	34.44	1.52	-0.004	-0.015	0.007	-0.004				
34.44	35.36	0.92	0.006	0.036	0.112	0.051				
35.36	36.88	1.52	0.002	0.043	0.018	0.021				
36.88	37.49	0.61	0.073	0.211	0.024	0.103				
37.49	39.01	1.52	0.133	0.011	0	0.048				
39.01	40.54	1.53	0.008	0.066	0.012	0.029				
40.54	42.06	1.52	0.057	0.028	0.024	0.036				
42.06	43.59	1.53	0	-0.02	0.007	-0.004				
43.59	44.81	1.22	0	0.079	0.001	0.027				
44.81	46.33	1.52	0.023	0.004	-0.002	0.008				
46.33	48.16	1.83	0.007	0.208	0.007	0.074				
48.16	49.68	1.52	0	-0.006	-0.006	-0.004				
49.68	51.21	1.53	0.041	0.04	0.054	0.045				
51.21	52.73	1.52	0.218	0.014	0.006	0.079				
52.73	54.25	1.52	0.149	0.163	0	0.104				
54.25	54.86	0.61	0.408	0.019	-0.003	0.141				

GeoSpark Logger Print Logs ~ Mag Susceptibility

Hole ID: **ORO13-12**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
54.86	55.78	0.92	0.047	0.029	0.031	0.036				
55.78	57.3	1.52	-0.065	0.012	0.022	-0.01				
57.3	58.06	0.76	0.482	0.027	0.271	0.26				
58.06	58.83	0.77	-0.008	0.008	0.015	0.005				
58.83	60.35	1.52	0.121	0.009	0.007	0.046				
60.35	61.87	1.52	0.019	0.099	0.035	0.051				
61.87	63.4	1.53	0.089	0.004	0.021	0.038				
63.4	64.92	1.52	0.186	0.014	0.023	0.074				
64.92	66.45	1.53	0.029	0.278	0.009	0.105				
66.45	67.92	1.47	0.044	0	0.028	0.024				
67.92	69.19	1.27	0.002	0.002	0.003	0.002				
69.19	70.41	1.22	0.045	0.133	0.183	0.12				
70.41	71.93	1.52	0.032	0.028	0.032	0.031				
71.93	73.15	1.22	0.029	-0.004	0	0.008				
73.15	74.07	0.92	0.038	-0.002	-0.005	0.01				
74.07	75.29	1.22	0.117	0.006	0.007	0.043				
75.29	76.2	0.91	0.02	0.016	0.031	0.022				
76.2	78	1.8	0.179	0.166	0.541	0.295				
78	80	2	0.017	0.01	-0.007	0.007				
80	82	2	0.005	0.067	0	0.024				
82	84	2	0.005	0.349	0.087	0.147				
84	86	2	0.897	0.061	0.169	0.376				
86	88	2	0.187	-0.009	0.008	0.062				
88	90	2	-0.001	0.013	0.032	0.015				
90	92	2	0.034	0.07	0.002	0.035				
92	94	2	0.004	0.005	0.023	0.011				
94	96	2	0.258	0.199	-0.008	0.15				
96	98	2	0.006	0.003	0.342	0.117				
98	100	2	0.015	-0.003	0.016	0.009				
100	102	2	0.052	0.051	0	0.034				
102	104	2	0.004	0.005	0.005	0.005				
104	106	2	0.029	0.005	0.001	0.012				
106	108	2	0.001	0.013	0.042	0.019				
108	110	2	0.009	0.017	0.004	0.01				
110	112	2	0.357	0.228	-0.001	0.195				
112	114	2	0.001	0.062	-0.001	0.021				
114	116	2	0.228	0.537	0.004	0.256				
116	118	2	0.048	0.248	0	0.099				
118	120	2	0	0.005	-0.004	0				

GeoSpark Logger Print Logs ~ Mag Susceptibility

Hole ID: **ORO13-12**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
120	122	2	-0.008	0.003	0.006	0				
122	124	2	-0.001	0.014	0.167	0.06				
124	126	2	0.251	0.064	0.021	0.112				
126	128	2	0.057	0.024	0.065	0.049				
128	130	2	0.02	0.037	0.059	0.039				
130	132	2	0.031	0.055	0.202	0.096				
132	134	2	0.021	0.029	0.021	0.024				
134	136	2	0.04	0.033	0.005	0.026				
136	138	2	0.275	0.174	0.026	0.158				
138	140	2	0.184	0.023	0.026	0.078				
140	142	2	0.028	0.135	0.025	0.063				
142	144	2	0.025	0.694	0.019	0.246				
144	146	2	0.075	0.032	0.07	0.059				
146	148	2	0.037	0.059	0.373	0.156				
148	150	2	0.036	0.245	0.201	0.161				
150	152	2	0.037	0.005	0.008	0.017				
152	154	2	0.042	0.048	0.031	0.04				
154	156	2	0.047	0.048	0.031	0.042				
156	158	2	0.037	0.225	0.22	0.161				
158	160	2	0.025	0.035	0.017	0.026				
160	162	2	0.03	0.234	0.025	0.096				
162	164	2	-0.002	-0.003	0.215	0.07				
164	166	2	0.015	0.015	0.069	0.033				
166	167.03	1.03	0.005	0.003	0.017	0.008				
167.03	169	1.97	0.015	0.625	0.022	0.221				
169	171	2	0.151	0.165	0.02	0.112				
171	173	2	0.79	0.029	0.046	0.288				
173	175	2	0.033	0.028	0.033	0.031				
175	177	2	0.177	0.153	0.069	0.133				
177	179	2	0.035	0.007	0.029	0.024				
179	181	2	0.007	0.141	0.045	0.064				
181	183	2	0.038	0.14	0.043	0.074				
183	185	2	0.205	0.02	0.044	0.09				
185	187.15	2.15	0.159	0.152	0.062	0.124				
187.15	189	1.85	0.139	0.02	0.04	0.066				
189	191	2	-0.002	0.159	0.01	0.056				
191	193	2	-0.001	0	0.037	0.012				
193	195	2	0.091	0.075	0.508	0.225				
195	197	2	0.096	0.038	0.05	0.061				

GeoSpark Logger Print Logs ~ Mag Susceptibility

Hole ID: **ORO13-12**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
197	199	2	0.14	0.006	0.056	0.067				
199	201	2	0.194	0.176	0.03	0.133				
201	203	2	0.01	0	0.03	0.013				
203	205	2	0	0.02	0.028	0.016				
205	207	2	0.009	0.05	0.021	0.027				
207	209	2	1.23	0.009	0.039	0.426				
209	211	2	0.081	0.144	0.307	0.177				
211	213	2	0.358	0.058	0.035	0.15				
213	215	2	0.085	0.005	0.032	0.041				
215	217	2	0.063	0.152	0.041	0.085				
217	219	2	0.078	0.042	0.034	0.051				
219	221	2	0.184	0.26	0.007	0.15				
221	223	2	0.6	0.036	0.005	0.214				
223	225	2	0.225	0.203	0.073	0.167				
225	227	2	0.069	0.221	0.035	0.108				
227	227.99	0.99	0.021	0.163	0.162	0.115				

GeoSpark Logger Print Logs ~ DH Samples

DataSet: ORO_GF

Hole ID: ORO13-12

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
7.01	8.35	Q187288	HC	RC	☐	
8.35	9.75	Q187289	HC	RC	☐	
9.75	10.97	Q187291	HC	RC	☐	
10.97	11.89	Q187292	HC	RC	☐	
11.89	13.11	Q187293	HC	RC	☐	
13.11	14.63	Q187294	HC	RC	☐	
14.63	15.24	Q187295	HC	RC	☐	
16.15	17.37	Q187296	HC	RC	☑	
17.37	18.29	Q187297	HC	RC	☐	
18.29	19.2	Q187298	HC	RC	☐	
19.2	20.42	Q187299	HC	RC	☐	
20.42	21.95	Q187301	HC	RC	☐	
21.95	23.47	Q187302	HC	RC	☐	
23.47	24.38	Q187303	HC	RC	☐	
24.38	26.82	Q187304	HC	RC	☐	
26.82	28.35	Q187305	HC	RC	☑	
28.35	29.26	Q187306	HC	RC	☐	
29.26	30.48	Q187307	HC	RC	☐	
30.48	31.39	Q187308	HC	RC	☐	
31.39	32.92	Q187309	HC	RC	☐	
32.92	34.44	Q187311	HC	RC	☐	
34.44	35.36	Q187312	HC	RC	☐	
35.36	36.88	Q187313	HC	RC	☐	
36.88	37.49	Q187314	HC	RC	☑	
37.49	39.01	Q187316	HC	RC	☑	
39.01	40.54	Q187317	HC	RC	☐	
40.54	42.06	Q187318	HC	RC	☐	
42.06	43.59	Q187319	HC	RC	☐	
43.59	44.81	Q187321	HC	RC	☐	
44.81	46.33	Q187322	HC	RC	☐	
46.33	48.16	Q187323	HC	RC	☐	
48.16	49.68	Q187324	HC	RC	☐	
49.68	51.21	Q187325	HC	RC	☐	
51.21	52.73	Q187326	HC	RC	☐	
52.73	54.25	Q187327	HC	RC	☐	
54.25	54.86	Q187328	HC	RC	☐	
54.86	55.78	Q187329	HC	RC	☐	

GOLD FIELDS

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-12**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
55.78	57.3	Q187331	HC	RC	☐	
57.3	58.06	Q187332	HC	RC	☐	
58.06	58.83	Q187333	HC	RC	☐	
58.83	60.35	Q187334	HC	RC	☐	
60.35	61.87	Q187335	HC	RC	☐	
61.87	63.4	Q187336	HC	RC	☑	
63.4	64.92	Q187337	HC	RC	☐	
64.92	66.45	Q187338	HC	RC	☐	
66.45	67.97	Q187339	HC	RC	☐	
67.97	69.19	Q187341	HC	RC	☑	
69.19	70.41	Q187343	HC	RC	☐	
70.41	71.93	Q187344	HC	RC	☐	
71.93	73.15	Q187345	HC	RC	☐	
73.15	74.07	Q187346	HC	RC	☐	
74.07	75.29	Q187347	HC	RC	☐	
75.29	76.2	Q187348	HC	RC	☐	
76.2	78	Q187349	HC	RC	☐	
78	80	Q187351	HC	RC	☐	
80	82	Q187352	HC	RC	☐	
82	84	Q187353	HC	RC	☐	
84	86	Q187354	HC	RC	☐	
86	88	Q187355	HC	RC	☐	
88	90	Q187356	HC	RC	☐	
90	92	Q187357	HC	RC	☐	
92	94	Q187358	HC	RC	☐	
94	96	Q187359	HC	RC	☐	
96	98	Q187361	HC	RC	☐	
98	100	Q187362	HC	RC	☐	
100	102	Q187363	HC	RC	☐	
102	104	Q187364	HC	RC	☐	
104	106	Q187365	HC	RC	☐	
106	108	Q187366	HC	RC	☐	
108	110	Q187367	HC	RC	☐	
110	112	Q187368	HC	RC	☐	
112	114	Q187369	HC	RC	☑	
114	116	Q187372	HC	RC	☐	
116	118	Q187373	HC	RC	☐	
118	120	Q187374	HC	RC	☑	
120	122	Q187375	HC	RC	☐	

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-12**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
122	124	Q187376	HC	RC	☐	
124	126	Q187377	HC	RC	☑	
126	128	Q187378	HC	RC	☐	
128	130	Q187379	HC	RC	☐	
130	132	Q187381	HC	RC	☐	
132	134	Q187382	HC	RC	☐	
134	136	Q187383	HC	RC	☐	
136	138	Q187384	HC	RC	☐	
138	140	Q187385	HC	RC	☐	
140	142	Q187386	HC	RC	☐	
142	144	Q187387	HC	RC	☐	
144	146	Q187388	HC	RC	☐	
146	148	Q187389	HC	RC	☐	
148	150	Q187391	HC	RC	☐	
150	152	Q187392	HC	RC	☐	
152	154	Q187393	HC	RC	☑	
154	156	Q187394	HC	RC	☑	
156	158	Q187395	HC	RC	☐	
158	160	Q187396	HC	RC	☐	
160	162	Q187397	HC	RC	☑	
162	164	Q187399	HC	RC	☐	
164	166	Q187401	HC	RC	☐	
166	167.03	Q187402	HC	RC	☐	
167.03	169	Q187403	HC	RC	☐	
169	171	Q187404	HC	RC	☐	
171	173	Q187405	HC	RC	☐	
173	175	Q187406	HC	RC	☐	
175	177	Q187407	HC	RC	☐	
177	179	Q187408	HC	RC	☐	
179	181	Q187409	HC	RC	☐	
181	183	Q187411	HC	RC	☐	
183	185	Q187412	HC	RC	☐	
185	187.15	Q187413	HC	RC	☑	
187.15	189	Q187414	HC	RC	☑	
189	191	Q187415	HC	RC	☐	
191	193	Q187416	HC	RC	☐	
193	195	Q187417	HC	RC	☐	
195	197	Q187418	HC	RC	☐	
197	199	Q187419	HC	RC	☐	

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-12**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
199	201	Q187421	HC	RC	☐	
201	203	Q187422	HC	RC	☐	
203	205	Q187423	HC	RC	☐	
205	207	Q187424	HC	RC	☐	
207	209	Q187425	HC	RC	☑	
209	211	Q187427	HC	RC	☐	
211	213	Q187428	HC	RC	☐	
213	215	Q187429	HC	RC	☐	
215	217	Q187431	HC	RC	☐	
217	219	Q187432	HC	RC	☐	
219	221	Q187433	HC	RC	☐	
221	223	Q187434	HC	RC	☐	
223	225	Q187435	HC	RC	☐	
225	227	Q187436	HC	RC	☐	
227	227.99	Q187437	HC	RC	☐	END OF HOLE

GeoSpark Logger Print Logs ~ Duplicate Samples

DataSet: ORO_GF

Hole ID: ORO13-12

From (m)	To (m)	Sample ID	Original Sample ID	QC Category	Comments
16.15	17.37	Ch:Q187296	Q187296	LABCHCK	
26.82	28.35	Ch:Q187305	Q187305	LABCHCK	
36.88	37.49	Q187315	Q187314	FD	
37.49	39.01	Ch:Q187316	Q187316	LABCHCK	
61.87	63.4	Ch:Q187336	Q187336	LABCHCK	
67.97	69.19	Q187342	Q187341	FD	
67.97	69.19	Pd:Q187341	Q187341	PREPCHK	
67.97	69.19	Ch:Q187341	Q187341	LABCHCK	
112	114	Q187370	Q187369	FD	
118	120	Ch:Q187374	Q187374	LABCHCK	
124	126	Ch:Q187377	Q187377	LABCHCK	
152	154	Pd:Q187393	Q187393	PREPCHK	
154	156	Ch:Q187394	Q187394	LABCHCK	
160	162	Q187398	Q187397	FD	
185	187.15	Ch:Q187413	Q187413	LABCHCK	
187.15	189	Ch:Q187414	Q187414	LABCHCK	
207	209	Q187426	Q187425	FD	

GeoSpark Logger Print Logs ~ Standards / Blanks

DataSet: **ORO_GF**

Hole ID: **ORO13-12**

Sample ID	Standard ID	Comments
Q187290	FB	
Q187300	CDN-GS-P6	
Q187310	FB	
Q187320	CDN-CM-25	
Q187330	FB	
Q187340	CDN-GS-P6	
Q187350	FB	
Q187360	CDN-CM-25	
Q187371	FB	
Q187380	CDN-GS-P6	
Q187390	FB	
Q187400	CDN-GS-P6	
Q187410	FB	
Q187420	CDN-CM-25	
Q187430	FB	

Gold Fields Selwyn – Quicklog 2013

<table>
<tr><td>Hole no: ORO13-13
Logged By: Tim Stubley</td><td>Az: 155°</td><td>Dip: -60°</td><td>Target depth:
200 m</td><td colspan="2">EOH: 112.47 m</td></tr>
<tr><td>Start date:
September 01, 2013</td><td>End date:
September 03, 2013</td><td>Pad:
ORO13-Y</td><td>E: 414545</td><td>N: 7012678</td><td>Elevation:
1555 m</td></tr>
<tr><td colspan="3">Target: ORO13-13 targets quartz±FeCarb veins in a gabbroic intrusive, in a zone of anomalously high soil geochemistry.</td><td colspan="3">Target explained? Anticipated gabbroic unit identified in surface mapping was not intersected, however fine grained micritic limestone containing quartz±FeCarb veins may have been misinterpreted as a fine grained intrusive. Soil geochemistry does not appear to be explained by drilling.</td></tr>
<tr><td colspan="6">Summary:
Location: ORO13-13 is situated in the south east portion of the claim group in target area ‘Area 51’. Approximately 15 km SE of the ‘Main Zone’.
Lithology: Overburden to 6.1m followed by calcareous mudstone and shale to 8.53 m. Massive micritic limestone extends from 8.53 to 23.77 m, followed by a zone of limestone and shale rubble to 26.67 m. The core from 26.67 m to 29.92 m is dominated by fault gouge and calcareous shale rubble. A short zone of competent micritic limestone extends to 30.7 m, followed by a fault gouge and rubble zone that extends to 43 m. Laminated calcareous shale and mudstone extends to 80.51 m. From 80.51 m to EOH at 112.47 m, micritic limestone interbeds <6m occur within laminated calcareous shale. A pyrite and
Mineralization: Trace disseminated pyrite occurs to 43 m, increases to ~2% with local zones (<4 m) containing up to 10% disseminated pyrite to EOH. Vein- hosted pyrite up to ~10 % occurs within carbonate breccia cement between 105.72 m and 108.5 m.
Interpretation/Comments: Anticipated gabbroic unit identified in surface mapping was not intersected, however fine grained micritic limestone containing quartz±FeCarb veins may have been misinterpreted as a fine grained intrusive.</td></tr>
</table>

Shift	From	To	Comments
Sept 01-2/13 0 – 64.92 m.	**0**	**6.10**	**Overburden**
	6.10	**8.53**	**Weathered calcareous shale (MdstCal)** Grey brown weathered and sheared shale. Cleavage ~10°tca. Weak reaction to HCl. Strong FeOx/FeCarb alteration. Rock decomposed, abundant gouge, local quartz±FeCarb veins, typically <2mm but up to 10mm with cores of glossy black crumbly carbon mineral (dull grey streak). Not visibly mineralised, possible weathered pyrite.
	8.53	**23.77**	**Micritic limestone (LsMic)** Light grey, massive micritic limestone. Strong reaction toHCl. Common gouge and rubble. Strong FeOx/FeCarb alteration. Stockwork FeCarb±quartz±trace pyrite veins, 0.5 – 6mm (up to 40mm locally), 10 – 60°tca, may contain glossy black crumbly carbon mineral and have bleached envelopes. Locally cross cut by quartz veins 1 - 4mm, 20-70° tca.

			Common very fine grained disseminated pyrite. **Py ~2%**
	23.77	**26.67**	**Limestone and graphitic calcareous shale rubble (LsMic, MdstCal).** Rubble composed of limestone and graphitic shale interbeds. Shale is strongly clay altered to gouge; limestone fragments are cut by quartz±FeCarb stockwork. **Trace disseminated pyrite.**
	26.67	**29.92**	**Faulted calcareous black graphitic shale (MdstCal, Fault)** Interval dominated by gouge and angular graphitic black shale fragments. Weak reaction to HCl. **Trace disseminated pyrite**
	29.92	**30.7**	**Micritic limestone (LsMic)** Light grey, massive micritic limestone. Strong reaction to HCl. Common gouge and rubble. FeCarb alteration as vein envelopes. Stockwork quartz ±FeCarb veins 0.5 – 6mm 10 – 60°tca, may contain glossy black crumbly carbon mineral and have bleached envelopes. **Trace disseminated pyrite.**
	30.7	**43**	**Fault zone, limestone and shale (Fault, LsMic, MdstCal)** Faulted limestone and shale gouge and rubble. Dominantly limestone rubble with common vein quartz fragments to 31.39 m, gradually changing to black shale gouge with rare limestone fragments. **Trace disseminated pyrite**
	43	**49**	**Laminated calcareous shale (MdstCal)** Light grey weakly stratified calcareous shale. Bedding and cleavage roughly parallel at ~ 15° tca. Common rubble and minor graphitic gouge. Common quartz±FeCarb veins, local calcite veins typically 50-70° tca. Disseminated subhedral to euhedral pyrite along cleavage. **Py ~2%**
	49	**52.15**	**Laminated calcareous shale (MdstCal)** Light grey weakly stratified calcareous shale. Undulating bedding ~ 20 – 30° tca, cleavage oblique at ~15°. Common rubble and minor graphitic gouge. Strongly disseminated subhedral to euhedral pyrite. **Py ~10%**
	52.15	**63.4**	**Laminated calcareous shale (MdstCal)** Grey silty laminated to black massive graphitic shale. Moderate to strong reaction to HCl throughout. Common rubble and graphitic gouge. Common quartz±FeCarb veins, 1 -10mm, locally form stockwork (possible fault infill). Amorphous pyrite aggregates occur in faulted zones, local disseminated pyrite. **Py ~ 1%**
Sept 02-03/13 64.92 – 112.47 m	**63.40**	**80.51**	**Laminated calcareous black shale (MdstCal)** Massive, graphitic black shale. Moderate to strong reaction to HCl. Local lamination parallel to cleavage ~25°tca. Common faults and gouge on shear planes ~20 – 60°. Rare quartz±FeCarb veins. Local

EOH			pyrite nodules. **Py ~1%**
	80.51	**82.95**	**Micritic limestone (LsMic)** Light grey, massive micritic limestone. Strong reaction to HCl. Stockwork quartz ±Carb veins 0.5 – 6mm 10 – 60°tca. Patchy disseminated pyrite. **Py ~2%**
	82.95	**86**	**Laminated calcareous shale (MdstCal)** Laminated calcareous shale, bedding ~ 15°tca. Strong reaction to HCl. Abundant fine grained disseminated pyrite along bedding planes. Rare <2mm quartz±carbonate veins, orthogonal to bedding at ~15°tca. **Py ~3%**
	86	**89.03**	**Micritic limestone (LsMic)** Light grey, massive micritic limestone. Strong reaction to HCl. Stockwork quartz ±Carb veins 1 – 30mm, 10 – 60°tca. Abundant fine grained euhedral disseminated pyrite. **Py ~2%**
	89.03	**99.57**	**Laminated calcareous graphitic shale (MdstCal)** Laminated calcareous graphitic shale, bedding ~ 15°tca. Patchy moderate reaction to HCl. Abundant fine grained disseminated pyrite along bedding planes. Common rubble and graphite coated shear planes ~30° tca. Rare <2mm quartz±carbonate veins, orthogonal to bedding at ~15°tca. **Py ~2%**
	99.57	**105.72**	**Micritic limestone (LsMic)** Light grey, massive micritic limestone. Strong reaction to HCl. Minor faulted graphitic shale interlayers. Stockwork quartz ±Carb veins 1 – 30mm, 10 – 60°tca. Abundant fine grained euhedral disseminated pyrite. **Py ~2%**
	105.72	**108.5**	**Micritic limestone breccia (LsMic)** Grey to black carbonate cemented micritic limestone and shale breccia. Angular shards <3cm of limestone and black calcareous mudstone cemented by carbonate±pyrite veins <1cm. Fabric ~ 40° tca parallels fault bounded lower contact. Disseminated pyrite in limestone clasts. **Py ~ 10%**
	108.5	**110.03**	**Faulted black calcareous shale (MdstCal)** Black shale and gouge, shear planes ~40° tca. Common carbonate veins in more competent sections <12cm. Patchy disseminated and aggregate pyrite. **Py ~ 1%**
	110.03	**110.6**	**Micritic limestone (LsMic)** Light grey, massive micritic limestone. Strong reaction to HCl. Minor faulted graphitic shale interlayers.

			Stockwork quartz ±Carb veins 1 – 30mm, 10 – 60°tca. Abundant fine grained euhedral disseminated pyrite. **Py ~2%**
	110.6	**112.47**	**Laminated calcareous graphitic shale (MdstCal)** Laminated calcareous graphitic shale, bedding ~ 60°tca. Patchy moderate reaction to HCl. Abundant fine grained disseminated pyrite along bedding planes. Common rubble and graphite coated shear planes ~30° tca. Rare discontinuous quartz±carbonate veins. **Py ~2%**

DataSet: **ORO_GF**

Depth (m)	Hole Type	Core Diamete	Grid ID	East	North	Elevation	Survey Method	Survey Date	Survey By	Date Started	Date Completed	Logged By	Prospect	Validated By
Hole: ORO13-13														
112.47 m	DD	HQ/NQ	UTM09N_NAD83	414545	7012678	1555	GPS	28/08/2013	LD	01/09/2013	03/09/2013	TimS	Area 51	

GeoSpark Logger Print Logs ~ DH Surveys

DataSet: **ORO_GF**

Hole ID: **ORO13-13**

Depth (m)	Survey Method	Grid ID	Dip	Surv. Tool Azimuth	Magnetic Declination	Corrected Azimuth	Magnetics	Date Surveyed	Survey Instrument	Bad Reading	Comments
0	COLL	UTM09N_NAD83	-60	210	0	210		03/10/2013	CMP	☐	
13.11	EZ Shot	UTM09N_NAD83	-60.7	131.3	22.5	153.8		03/10/2013	EZ	☐	
61.87	EZ Shot	UTM09N_NAD83	-61.6	128.9	22.5	151.4		03/10/2013	EZ	☐	
112.47	EZ Shot	UTM09N_NAD83	-62.1	130.3	22.5	152.8		03/09/2013	EZ	☐	

Gold Fields Canada **Signed:** ______________

DataSet: ORO_GF

Hole ID: ORO13-13

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	0	6.1	Overburden	Overburden (OB)	

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	6.1	8.53	Mudstone - Calcareous	Calcareous mudstone	Gry-brn weathered/sheared shale. Clvg~10°. Wk react to HCl. S FeOx/FeCarb alt. Abundant gouge. Local qtz±FeCarb vns w/ black crumbly carbon min. No visible Py, poss weathered out.

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	6.1	8.53	Py	0.1											trace disseminated pyrite

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	6.1	8.53	VQtz	±FeCarb	1										local quartz±FeCarb veins, typically <2mm but up to 10mm with cores of glossy black crumbly carbon mineral (dull grey streak).

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	6.1	7.2	RUB	S	
	7.45	7.9	FLTG	VS	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	8.53	23.77	Siltstone - Calcarous	Micritic limestone	Lt gry micritic Ls. S reaction HCl. Comn gouge+rubble. S FeOx/FeCarb alt. Stkwk FeCarb±qtz±tr py vns, 0.5 – 6mm (up to 40mm locally), 10 – 60°tca, may contain gloss black carbon min, have bleached env. Locly Xcut by qtz vns. Comn vfg dis Py.

DataSet: ORO_GF

Hole ID: ORO13-13

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
8.53	23.77	Py	2	DIS										Common very fine grained disseminated pyrite. Py ~2%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
8.53	23.77	Vcarb	±FeCarb±qtz	10	VQtz		2							Stockwork FeCarb±quartz±trace pyrite veins, 0.5 – 6mm (up to 40mm locally), 10 – 60°tca, may contain glossy black crumbly carbon mineral and have bleached envelopes. Locally cross cut by quartz veins 1 - 4mm, 20-70° tca.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
8.6	8.7	FLTG	VS	
9.85	10.06	RUB	S	
11	11.15	FLTG	VS	
13.55	13.56	FLT	S	30
14	14.63	RUB		
14.63	23.77		M	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	23.77	26.67	Siltstone and Mudstone	Micritic limestone	Rubble composed of limestone and graphitic shale interbeds. Shale is strongly clay altered to gouge; limestone fragments are cut by quartz±FeCarb stockwork. Trace disseminated pyrite.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
23.77	26.67	VQtz	±FeCarb	3										limestone fragments are cut by quartz±FeCarb stockwork.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
23.77	25.3	RUB	VS	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	26.67	29.92	Tectonic/Fault Rock - Undifferentiated	Fault (UT)	Interval dominated by gouge and angular graphitic black shale fragments. Weak reaction to HCl. Trace disseminated pyrite

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DataSet: ORO_GF

Hole ID: ORO13-13

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
26.67	29.92	NoVeins	n/an/a											

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
26.67	29.92	FLTG	VS	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	29.92	30.7	Siltstone - Calcarous	Micritic limestone	Lt gry micritic Ls. S reaction HCl. Comn gouge and rubble. FeCarb alt as vn envelopes. Stockwork quartz ±FeCarb veins 0.5 – 6mm 10 – 60°tca, may contain glossy black crumbly carbon mineral and have bleached envelopes. Tr dis py.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
29.92	30.7	VQtz	±FeCarb	5										Stockwork quartz ±FeCarb veins 0.5 – 6mm 10 – 60°tca, may contain glossy black crumbly carbon mineral and have bleached envelopes

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	30.7	43	Tectonic/Fault Rock - Undifferentiated	Fault (UT)	Faulted limestone and shale gouge and rubble. Dominantly limestone rubble with common vein quartz fragments to 31.39 m, gradually changing to black shale gouge with rare limestone fragments. Tr dis Py.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
23.77	43	Py	0.1	DIS										trace disseminated pyrite

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
30.7	43	VQtz	n/a											common vein quartz fragments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
30.7	43	FLTG	VS	

DataSet: ORO_GF

Hole ID: ORO13-13

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	43	49	Mudstone - Calcareous	Calcareous mudstone	Lt grey wkly stratified calcareous shale. Bed + clvg roughly parallel ~15°tca. Common rubble, minor graphitic gouge. Comn quartz±FeCarb vns, local calcite vns typically 50-70° tca. Disseminated subhedral to euhedral pyrite along cleavage, ~2%.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
43	49	Py	2	DIS										Disseminated subhedral to euhedral pyrite along cleavage. Py ~2%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
44.4	44.41	FOL		15
44.41	44.42	BED		
47	48	RUB	M	
48.34	48.55	FLTG	S	

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	49	52.15	Mudstone - Calcareous	Calcareous mudstone	Light grey weakly stratified calcareous shale. Undulating bedding ~ 20 – 30° tca, cleavage oblique at ~15°. Common rubble and minor graphitic gouge. Strongly disseminated subhedral to euhedral pyrite.Py ~10%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
49	52.15	Py	10	DIS										Strongly disseminated subhedral to euhedral pyrite. Py ~10%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
43	52.15	VQtz	±FeCarb	1	Vcal	n/a	0.5							Common quartz±FeCarb veins, local calcite veins typically 50-70° tca.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
51.6	51.61	BED		20
51.61	51.62	FOL		10

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	52.15	63.4	Mudstone - Calcareous	Calcareous mudstone	gry silty lam - blk mass graphitic shale. M-S reaction HCl th/out. Comn rubble+ graphitic gouge. Stkwk Qtz±FeCarb vns 1-10mm (poss flt infill). Amorph Py aggr in flt zones, locl dis Py ~1%

Gold Fields Canada

Signed: _______________

DataSet: ORO_GF

Hole ID: ORO13-13

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
52.15	63.4	Py	1	AGG										Amorphous pyrite aggregates occur in faulted zones, local disseminated pyrite. Py ~ 1%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
52.15	63.4	VQtz	±FeCarb	2										Common quartz±FeCarb veins, 1 -10mm, locally form broken stockwork (possible fault infill).

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
52.24	52.4	FLT	M	20
55.9	56.4	FLTG	VS	
56.5	57.8	RUB	S	
59.45	61.87	FLTBX		25
63	63.01	BED		

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	63.4	80.51	Mudstone - Calcareous	Calcareous mudstone	Massive, graphitic black shale. Moderate to strong reaction to HCl. Local lamination parallel to cleavage ~25°tca. Common faults and gouge on shear planes ~20 – 60°. Rare quartz±FeCarb veins. Local pyrite nodules. Py ~1%

DataSet: **ORO_GF**

Hole ID: **ORO13-13**

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
63.4	80.51	Py	1	NOD										Local pyrite nodules. Py ~1%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
63.4	80.51	VQtz	±FeCarb	0.5										Rare quartz±FeCarb veins.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
64.88	65.1	FLTG	S	
66	66.45			
66.45	67.51	RUB		
68.1	68.16	FLTG		25
68.95	68.96		M	20
70.03	70.09		S	45
71.83	72			
73.65	74.07			
74.07	74.9	RUB		
74.9	75	FLTG		
75	76	RUB		
76	76.2	FLTG		
76.43	76.5	RUB		
76.5	79.1			

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	80.51	82.95	Siltstone - Calcarous	Micritic limestone	Light grey, massive micritic limestone. Strong reaction to HCl. Stockwork quartz ±Carb veins 0.5 – 6mm 10 – 60°tca. Patchy disseminated pyrite. Py ~2%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
80.51	82.95	Py	2	DIS										Patchy disseminated pyrite. Py ~2%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
80.51	82.95	VQtz	±carb	20										Stockwork quartz ±Carb veins 0.5 – 6mm 10 – 60°tca.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle

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DataSet: ORO_GF

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	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	82.95	86	Mudstone - Calcareous	Calcareous mudstone	Laminated calcareous shale, bedding ~ 15°tca. Strong reaction to HCl. Abundant fine grained disseminated pyrite along bedding planes. Rare <2mm quartz±carbonate veins, orthogonal to bedding at ~15°tca. Py ~3%

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	82.95	86	Py	3	DIS										Abundant fine grained disseminated pyrite along bedding planes. Py ~3%

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	82.95	86	VQtz	±carb	0.25										Rare <2mm quartz±carbonate veins, orthogonal to bedding at ~15°tca.

Structure:	From (m)	To (m)	Type	Intensity	CA Angle
	83.13	83.26	FLT	M	55

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	86	89.03	Siltstone - Calcarous	Micritic limestone	Light grey, massive micritic limestone. Strong reaction to HCl. Stockwork quartz ±Carb veins 1 – 30mm, 10 – 60°tca. Abundant fine grained euhedral disseminated pyrite. Py ~2%

Alteration:	From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:	From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
	86	89.03	Py	3	DIS										Abundant fine grained euhedral disseminated pyrite. Py ~2%

Veining:	From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
	86	89.03	VQtz	±carb	15										Stockwork quartz ±Carb veins 1 – 30mm, 10 – 60°tca.

Structure:	From (m)	To (m)	Type	Intensity	CA Angle

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	89.03	99.57	Mudstone - Calcareous	Calcareous mudstone	Lam calc-gtaph shale,beds ~15°tca.Patchy moderate reaction to HCl. Abundant fg dis pyrite along bed planes. Comn rubble, graph coated shear planes ~30°.Rare <2mm quartz±carbonate veins, orthogonal to bedding at ~15°tca.

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DataSet: ORO_GF

Hole ID: ORO13-13

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
89.03	99.57	Py	2	DIS										Abundant fine grained disseminated pyrite along bedding planes. Py ~2%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
89.03	99.57	VQtz	±carb	0.25										Rare <2mm quartz±carbonate veins, orthogonal to bedding at ~15°tca.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
90.73	90.74	FRAC	M	5
91.15	92.66	RUB		
92.66	92.7	FRAC		20
92.7	92.71			
94.35	94.42	FLTG	S	
96.25	96.32			
99.1	99.11	BED		40

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	99.57	105.72	Siltstone - Calcarous	Micritic limestone	Light grey, massive micritic limestone. Strong reaction to HCl. Minor faulted graphitic shale interlayers. Stockwork quartz ±Carb veins 1 – 30mm, 10 – 60°tca. Abundant fine grained euhedral disseminated pyrite. Py ~2%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
99.57	105.72	Py	2	DIS										Abundant fine grained euhedral disseminated pyrite. Py ~2%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
99.57	105.72	VQtz	±carb	20										Stockwork quartz ±Carb veins 1 – 30mm, 10 – 60°tca.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
100.1	100.12	FLT	S	15
101.2	101.22			45
101.33	101.4	FLTG		50
103.6	104.05	RUB		
104.75	105	FLT		

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DataSet: ORO_GF

Hole ID: ORO13-13

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	105.72	108.5	Siltstone - Calcarous	Micritic limestone	Gry-black carb cemented micritic Ls and shale brx. Ang clasts <3cm of Lsand MdstCal cementedby Carb+Py vns. Fabric 40° tca parallels fault bounded lower contact. Disseminated pyrite in limestone clasts.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
105.72	108.5	Py	10	VEN										Angular shards <3cm of limestone and black calcareous mudstone cemented by carbonate±pyrite veins <1cm. Fabric ~ 40° tca parallels fault bounded lower contact. Disseminated pyrite in limestone clasts. Py ~ 10%

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
105.72	108.5	Vcarb	±py	50										Angular shards <3cm of limestone and black calcareous mudstone cemented by carbonate±pyrite veins <1cm. Fabric ~ 40°

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
105.72	108.5	FLTBX	S	40

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	108.5	110.3	Mudstone - Calcareous	Calcareous mudstone	Black shale and gouge, shear planes ~40° tca. Common carbonate veins in more competent sections <12cm. Patchy disseminated and aggregate pyrite. Py ~ 1%

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
108.5	110.03	Vcarb	±qtz											Common carbonate veins in more competent sections

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
108.5	108.68	FLTBX	S	
109	109.75	FLT		

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DataSet: ORO_GF

Hole ID: ORO13-13

	From (m)	To (m)	GF Lith	Local Lith	Description
LITHO	110.6	112.47	Mudstone - Calcareous	Calcareous mudstone	Lam calc - graph shale, beds ~ 60°tca. Patchy moderate reaction to HCl. Abundant fine grained disseminated pyrite along bedding planes. Common rubble and graphite coated shear planes ~30° tca. Rare discontinuous quartz±carbonate veins.

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
110.6	112.47	Py	2	DIS										Abundant fine grained disseminated pyrite along bedding planes

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
110.6	112.47	VQtz	±carb	1										Rare discontinuous quartz±carbonate veins.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
110.6	111.15	FLTBX	S	
111.15	111.6	RUB		

Alteration:

From (m)	To (m)	Alt 1 Code	Alt 1 Interp	Alt 1 Int	Alt 2 Code	Alt 2 Interp	Alt 2 Int	Alt 3 Code	Alt 3 Interp	Alt 3 Int	Alt 4 Code	Alt 4 Interp	Alt 4 Int	Comments

Minerals:

From (m)	To (m)	Min 1 Code	Min 1 %	Min 1 Style	Min 2 Code	Min 2 %	Min 2 Style	Min 3 Code	Min 3 %	Min 3 Style	Min 4 Code	Min 4 %	Min 4 Style	Comments
110.6	112.47	Py	2	DIS										Abundant fine grained disseminated pyrite along bedding planes

Veining:

From (m)	To (m)	Vein 1	Vein 1 Mod	Vein 1 %	Vein 2	Vein 2 Mod	Vein 2 %	Vein 3	Vein 3 Mod	Vein 3 %	Vein 4	Vein 4 Mod	Vein 4 %	Comments
110.6	112.47	VQtz	±carb	1										Rare discontinuous quartz±carbonate veins.

Structure:

From (m)	To (m)	Type	Intensity	CA Angle
110.6	111.15	FLTBX	S	
111.15	111.6	RUB		

GeoSpark Logger Print Logs ~ Geotechnical

DataSet: ORO_GF

Hole ID: ORO13-13

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
6.1	7.2	1.1	0.84	76.3636	0	0	sli	50	50	STR	Minor amount of top of hole overburden mud mixed in.	all rubble broken core
7.2	8.53	1.33	1.33	100	0.28	21.05	mode	30	30	STR	Minor amount of top of hole overburden mud mixed in.	
8.53	10.06	1.53	1.37	89.5424	0	0	mode	75	75	STR		
10.06	11.58	1.52	1.5	98.6842	0.37	24.34	mode	50	50	VSTR		
11.58	13.11	1.53	1.4	91.5033	0	0	sli	50	50	VSTR		
13.11	14.63	1.52	1.52	100	0.1	6.58	sli	50	50	VSTR		
14.63	16.15	1.52	1.3	85.5263	0	0	sli	40	40	VSTR		
16.15	17.69	1.54	1.4	90.9090	0	0	sli	60	60	VSTR		mostly rubble
17.69	19.2	1.51	1.35	89.404	0	0	sli	100	100	VSTR		rubble
19.2	20.73	1.53	1.5	98.0393	0	0	sli	100	100	VSTR		rubble
20.73	22.25	1.52	1.25	82.2368	0	0	sli	50	50	VSTR		mostly rubble
22.25	23.77	1.52	1.48	97.3684	0	0	sof	50	50	STR		
23.77	25.3	1.53	1.2	78.4314	0	0	sof	50	50	STR		rubble
25.3	26.67	1.37	1.1	80.2919	0	0	sof	75	75	SFT		rubble
26.67	28.35	1.68	1.1	65.4762	0	0	sof	75	75	SFT		rubble
28.35	29.87	1.52	0.85	55.9210	0	0	sof	75	75	SFT	clay zones	rubble
29.87	31.39	1.52	1.46	96.0527	0.26	17.11	sli	100	100	STR		hard rock followed by rubble qtz vein rock
31.39	32.92	1.53	0.73	47.7125	0	0	sof	50	50	SFT		rubble &clay
32.92	34.44	1.52	0.79	51.9737	0	0	sof	50	50	STR		rubble
34.44	35.66	1.22	0.226	18.5246	0	0	sof	50	50	SFT		rubble & clay
35.66	36.27	0.61	0.6	98.3606	0	0	sof	50	50	SFT		rubble
36.27	37.49	1.22	0.8	65.5737	0	0	sof	50	50	SFT		clay
37.49	38.4	0.91	0.37	40.6594	0	0	sof	50	50	SFT	clay, some rubbly chips	
38.4	39.01	0.61	0.25	40.9838	0	0	sof	50	50	SFT	sand to gravel chips and rubble	
39.01	40.54	1.53	0.34	22.2222	0	0	mode	50	50	STR	rubble and chips	
40.54	42.06	1.52	0.2	13.1579	0	0	mode	50	50	STR	Rubble	
42.06	43.59	1.53	0.9	58.8236	0	0	sli	50	50	STR	rubble and broken core	
43.59	45.11	1.52	1.46	96.0526	0	0	sli	75	75	STR	broken fractured core	
45.11	46.63	1.52	1.25	82.2368	0.13	8.55	sli	75	75	VSTR		
46.63	48.16	1.53	1.4	91.5033	0	0	sli	75	75	STR		
48.16	49.68	1.52	0.85	55.9210	0	0	sli	50	50	STR	rubble, hard rock,chips & clay	
49.68	51.21	1.53	1.5	98.0393	0.1	6.54	sli	60	60	STR		
51.21	52.73	1.52	1.33	87.5	0	0	sli	75	75	STR		
52.73	54.25	1.52	1.52	100	1.03	67.76	sli	75	75	SFT		
54.25	55.78	1.53	1.4	91.5033	0.62	40.52	sli	35	35	STR		

GeoSpark Logger Print Logs ~ Geotechnical

Hole ID: **ORO13-13**

From (m)	To (m)	Interval Length	Recov. (m).	Recov. %	RQD (m)	RQD %	Matrix Type	Num Fracts.	Fract Freq / m	Strength	Material Description	Comments
55.78	56.69	0.91	0.81	89.011	0	0	mode	50	50	SFT	rubble	
56.69	58.22	1.53	1.26	82.3528	0	0	mode	75	75	STR		
58.22	59.13	0.91	0.91	100	0.16	17.58	mode	35	35	STR		
59.13	60.66	1.53	1.53	100.000	0.28	18.3	mode	100	100	STR		
60.66	61.87	1.21	0.95	78.5125	0.19	15.7	mode	50	50	STR		
61.87	63.4	1.53	1.53	99.9998	0.39	25.49	sof	40	40	STR		
63.4	64.92	1.52	1.05	69.0791	0	0	sof	25	25	STR		
64.92	66.45	1.53	0.85	55.5556	0.16	10.46	sof	25	25	SFT	half rubble	
66.45	67.51	1.06	0.7	66.0374	0	0	sof	30	30	SFT	mostly rubble	
67.51	69.19	1.68	1.45	86.3095	0.35	20.83	sof	25	25	STR		
69.19	70.71	1.52	1.2	78.9475	0.18	11.84	sof	40	40	STR		
70.71	72.39	1.68	1.48	88.0952	0.55	32.74	sof	30	30	STR		
72.39	74.07	1.68	0.95	56.5476	0	0	sof	50	50	SFT	mostly rubble	
74.07	75.29	1.22	1.1	90.1638	0	0	sof	50	50	STR	mostly rubble	
75.29	76.81	1.52	1.05	69.0791	0	0	sof	60	60	SFT	rubble	
76.81	78.49	1.68	0.92	54.7619	0	0	sof	60	60	STR	rubble	
78.49	79.1	0.61	0.5	81.9671	0	0	sof	25	25	SFT	rubble	
79.1	79.71	0.61	0.13	21.3115	0	0	sof	25	25	SFT	rubble	
79.71	80.47	0.76	0.12	15.7894	0	0	sof	25	25	SFT	mush	
80.47	81.99	1.52	0.55	36.1843	0.1	6.58	mode	20	20	STR		
81.99	84.12	2.13	1.04	48.8262	0.37	17.37	sof	50	50	STR		
84.12	85.95	1.83	1.62	88.5249	0.54	29.51	sof	18	18	SFT		
85.95	87.78	1.83	1.83	99.9999	1.06	57.92	mode	50	50	STR		
87.78	90.53	2.75	2.46	89.4546	0.8	29.09	mode	50	50	STR		
90.53	91.74	1.21	1.2	99.1736	0	0	sof	20	20	STR	mostly rubble	
91.74	92.66	0.92	0.55	59.7822	0	0	sof	20	20	STR	rubble	
92.66	95.25	2.59	2.35	90.7337	0.37	14.29	sof	35	35	STR		
95.25	96.32	1.07	1.13	105.608	0.11	10.28	sof	20	20	STR		
96.32	99.52	3.2	3	93.7501	0.8	25	sof	38	38	STR		
99.52	102.41	2.89	2.8	96.8856	0.3	10.38	mode	75	75	STR		
102.41	104.55	2.14	1.85	86.4486	0	0	mode	75	75	STR		
104.55	106.07	1.52	1.37	90.1318	0.76	50	mode	50	50	STR		
106.07	109.12	3.05	2.95	96.7212	0.79	25.9	sof	100	100	STR		
109.12	110.03	0.91	0.62	68.1322	0.11	12.09	sof	30	30	SFT		
110.03	111.56	1.53	1.23	80.3922	0.38	24.84	mode	75	75	STR		
111.56	112.47	0.91	0.82	90.1095	0	0	sof	50	50	SFT		END OF HOLE

GeoSpark Logger Print Logs ~ Mag Susceptibility

DataSet: ORO_GF

Hole ID: ORO13-13

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
6.1	7.2	1.1								na -rubble
7.2	8.53	1.33	0.114	0.344	0.112	0.19				
8.53	10.06	1.53	0.243	0.172	0.048	0.154				
10.06	11.58	1.52	0.228	0.189	0.28	0.232				
11.58	13.11	1.53	0.187	0.195	0.257	0.213				
13.11	14.63	1.52	0.135	0.242	0.175	0.184				
14.63	16.15	1.52	0.152	0.252	0.139	0.181				
16.15	17.69	1.54	0.125	0.239	0.09	0.151				
17.69	19.2	1.51	0.229	0.143	0.29	0.221				
19.2	20.73	1.53	0.192	0.199	0.142	0.178				
20.73	22.25	1.52	0.235	0.229	0.156	0.207				
22.25	23.77	1.52	0.196	0.176	0.419	0.264				
23.77	25.3	1.53	0.173	0.015	0.005	0.064				
25.3	26.67	1.37	0.164			0.164				rubble-na
26.67	28.35	1.68								rubble-na
28.35	29.87	1.52	0.111	0.248	0.138	0.166				same 15 cm interval rest is rubble
29.87	30.7	0.83	0.204	0.232	0.21	0.215				
30.7	31.39	0.69								rubble-na
31.39	32.92	1.53	0.017	0.063	0.042	0.041				same 15 cm interval rest is rubble
32.92	34.44	1.52								rubble-na
34.44	35.66	1.22								rubble-na
35.66	37.49	1.83								rubble-na
37.49	38.46	0.97	0.022	0.03	0.016	0.023				20 cm interval of soft mush
38.46	39.01	0.55								rubble-na
39.01	40.54	1.53								rubble-na
40.54	42.06	1.52								rubble-na
42.06	43	0.94								rubble-na
43	43.59	0.59	0.232	0.239	0.188	0.22				one 15 cm interval
43.59	45.11	1.52	0.196	0.331	0.17	0.232				
45.11	46.63	1.52	0.229	0.195	0.123	0.182				
46.63	48.16	1.53	0.041	0.194	0.081	0.105				
48.16	49.68	1.52	0.263	0.32	0.021	0.201				
49.68	51.21	1.53	0.126	0.05	0.167	0.114				
51.21	52.73	1.52	0.13	0.265	0.055	0.15				
52.73	54.25	1.52	0.03	0.258	0.112	0.133				
54.25	55.778	1.53	0.241	0.123	0.038	0.134				
55.778	56.69	0.91	0.199	0.177	0.173	0.183				sme 10 cm interval

GeoSpark Logger Print Logs ~ Mag Susceptibility

Hole ID: **ORO13-13**

From (m)	To (m)	Interval Length	Reading 1	Reading 2	Reading 3	Avg. Reading	Unit Code	Read By	Read Date	Comments
56.69	58.22	1.53								rubble-na
58.22	59.13	0.91	0.041	0.14	0.012	0.064				
59.13	60.66	1.53	0.031	0.246	0.145	0.141				
60.66	61.87	1.21	0.029	0.033	0.02	0.027				
61.87	63.4	1.53	0.025	0.041	0.047	0.038				
63.4	64.29	0.89	0.244	0.241	0.037	0.174				
64.29	66.45	2.16	0.03	0.03	0.018	0.026				
66.45	67.51	1.06								rubble-na
67.51	69.91	2.4	0.241	0.017	0.024	0.094				
69.91	70.71	0.8	0.11	0.116	0.153	0.126				
70.71	72.39	1.68	0.061	0.222	0.029	0.104				
72.39	74.07	1.68	0.041	0.031	0.268	0.113				
74.07	75.29	1.22								rubble-na
75.29	76.81	1.52								rubble-na
76.81	78.49	1.68	0.242	0.243	0.253	0.246				
78.49	79.1	0.61								rubble-na
79.1	80.51	1.41								rubble-na
80.51	81.99	1.48	0.037	0.475	0.511	0.341				
81.99	82.95	0.96	0.15	0.01	0.052	0.071				
82.95	84.12	1.17	0.248	0.019	0.357	0.208				
84.12	86	1.88	0.151	0.247	0.274	0.224				
86	87.78	1.78	0.192	0.183	0.306	0.227				
87.78	89.03	1.25	0.248	0.249	0.353	0.283				
89.03	90.53	1.5	0.239	0.241	0.324	0.268				
90.53	91.74	1.21	0.196	0.112	0.203	0.17				
91.74	92.66	0.92	0.191	0.154	0.187	0.177				3 measurements sae piece of core
92.66	94	1.34	0.094	0.013	0.015	0.041				
94	96	2	0.047	0.015	0.019	0.027				
96	98	2	0.232	0.212	0.208	0.217				
98	99.57	1.57	0.172	0.184	0.294	0.217				
99.57	101	1.43	0.42	0.206	0.225	0.284				
101	102.41	1.41	0.428	0.315	0.406	0.383				
102.41	104.55	2.14	0.298	0.261	0.204	0.254				
104.55	105.72	1.17	0.239	0.245	0.282	0.255				
105.72	107	1.28	0.689	0.052	0.533	0.425				
107	108.5	1.5	0.013	0.015	0.01	0.013				
108.5	110.03	1.53	0.326	0.206	0.137	0.223				
110.03	110.6	0.57	0.144	0.526	0.212	0.294				
110.6	112.47	1.87	0.035	0.007	0.004	0.015				END OF HOLE

DataSet: ORO_GF

Hole ID: ORO13-13

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
6.1	7.2	Q187438	HC	RC	☐	
7.2	8.53	Q187439	HC	RC	☐	
8.53	10.06	Q187441	HC	RC	✓	
10.06	11.58	Q187442	HC	RC	☐	
11.58	13.11	Q187443	HC	RC	☐	
13.11	14.63	Q187444	HC	RC	☐	
14.63	16.15	Q187445	HC	RC	☐	
16.15	17.69	Q187446	HC	RC	☐	
17.69	19.2	Q187447	HC	RC	☐	
19.2	20.73	Q187448	HC	RC	☐	
20.73	22.25	Q187449	HC	RC	☐	
22.25	23.77	Q187451	HC	RC	☐	
23.77	25.3	Q187452	HC	RC	☐	
25.3	26.67	Q187453	HC	RC	☐	
26.67	28.35	Q187454	HC	RC	☐	
28.35	29.92	Q187455	HC	RC	☐	
29.92	30.7	Q187456	HC	RC	☐	
30.7	31.39	Q187457	HC	RC	☐	
31.39	32.92	Q187458	HC	RC	☐	
32.92	34.44	Q187459	HC	RC	☐	
34.44	35.66	Q187461	HC	RC	☐	
35.66	37.49	Q187462	HC	RC	☐	
37.49	38.46	Q187463	HC	RC	☐	
38.46	39.01	Q187464	HC	RC	☐	
39.01	40.54	Q187465	HC	RC	☐	
40.54	42.06	Q187466	HC	RC	✓	
42.06	43	Q187468	HC	RC	☐	
43	43.59	Q187469	HC	RC	☐	
43.59	45.11	Q187471	HC	RC	☐	
45.11	46.63	Q187472	HC	RC	☐	
46.63	48.16	Q187473	HC	RC	☐	
48.16	49.68	Q187474	HC	RC	☐	
49.68	51.21	Q187475	HC	RC	☐	
51.21	52.73	Q187476	HC	RC	☐	
52.73	54.25	Q187477	HC	RC	✓	
54.25	55.78	Q187478	HC	RC	☐	
55.78	56.69	Q187479	HC	RC	☐	

GeoSpark Logger Print Logs ~ DH Samples

Hole ID: **ORO13-13**

From (m)	To (m)	Sample ID	Type	Sampled By	Has Duplicate	Comments
56.69	58.22	Q187481	HC	RC	☐	
58.22	59.13	Q187482	HC	RC	☐	
59.13	60.66	Q187483	HC	RC	☐	
60.66	61.87	Q187484	HC	RC	☐	
61.87	63.4	Q187485	HC	RC	☐	
63.4	64.92	Q187486	HC	RC	☐	
64.92	66.45	Q187487	HC	RC	☐	
66.45	67.51	Q187488	HC	RC	☐	
67.51	69.91	Q187489	HC	RC	☐	
69.91	70.71	Q187491	HC	RC	☑	
70.71	72.39	Q187492	HC	RC	☐	
72.39	74.07	Q187493	HC	RC	☐	
74.07	75.29	Q187494	HC	RC	☑	
75.29	76.81	Q187496	HC	RC	☐	
76.81	78.49	Q187497	HC	RC	☐	
78.49	79.1	Q187498	HC	RC	☐	
79.1	80.51	Q187499	HC	RC	☐	
80.51	81.99	Q187501	HC	RC	☐	
81.99	82.95	Q187502	HC	RC	☐	
82.95	84.12	Q187503	HC	RC	☐	
84.12	86	Q187504	HC	RC	☐	
86	87.78	Q187505	HC	RC	☐	
87.78	89.03	Q187506	HC	RC	☐	
89.03	90.53	Q187507	HC	RC	☐	
90.53	91.74	Q187508	HC	RC	☐	
91.74	92.66	Q187509	HC	RC	☐	
92.66	94	Q187511	HC	RC	☐	
94	96	Q187512	HC	RC	☐	
96	98	Q187513	HC	RC	☑	
98	99.57	Q187514	HC	RC	☐	
99.57	101	Q187515	HC	RC	☐	
101	102.41	Q187516	HC	RC	☐	
102.41	104.55	Q187517	HC	RC	☐	
104.55	105.72	Q187518	HC	RC	☐	
105.72	107	Q187519	HC	RC	☐	
107	108.5	Q187521	HC	RC	☐	
108.5	110.03	Q187522	HC	RC	☑	
110.03	110.6	Q187524	HC	RC	☐	
110.6	112.47	Q187525	HC	RC	☐	END OF HOLE

GeoSpark Logger Print Logs ~ Duplicate Samples

DataSet: ORO_GF

Hole ID: ORO13-13

From (m)	To (m)	Sample ID	Original Sample ID	QC Category	Comments
8.53	10.06	Ch:Q187441	Q187441	LABCHCK	
40.54	42.06	Q187467	Q187466	FD	
52.73	54.25	Ch:Q187477	Q187477	LABCHCK	
69.91	70.71	Pd:Q187491	Q187491	PREPCHK	
74.07	75.29	Q187495	Q187494	FD	
96	98	Ch:Q187513	Q187513	LABCHCK	
108.5	110.03	Q187523	Q187522	FD	

GeoSpark Logger Print Logs ~ Standards / Blanks

DataSet: ORO_GF

Hole ID: ORO13-13

Sample ID	Standard ID	Comments
Q187440	CDN-GS-P6	
Q187450	FB	
Q187460	CDN-CM-25	
Q187470	FB	
Q187480	CDN-GS-P6	
Q187490	FB	
Q187500	CDN-CM-25	
Q187510	FB	
Q187520	CDN-GS-P6	

Appendix VII - Drilling Assays and Logging Compilation

See Data Folder

for Data

Appendix VIII - QA/QC Report

Gold Fields Exploration Inc.

Gold Fields Selwyn Exploration: Oro Project, Yukon Territory

2013 QAQC Report- Au

Prepared by Julianne Madsen

Effective Date: April 15, 2014

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CORE LOGGING, SAMPLING PROCEDURE AND QA/QC

All drill core was flown directly from the drill site to the camp for processing. Core was logged by Tim Stubley, Shawn Vandekerkhove, Rob Campbell and Linda Dandy using a front end logging interface program for Microsoft Access, designed by Geospark. This logger syncs directly into a secure Maxwell DataShed SQL database in Vancouver.

All drilled core was sampled at 2 metre intervals, with additional breaks assigned based on changes in lithology, alteration or mineralisation. Alternating blanks and certified standard reference materials were inserted every 10 samples, and a field duplicate (consisting of ½ drill core, ie equal volume to original sample) was taken every 25 samples. Field blank samples consisted of carbonate landscaping stone. The certified reference standards (CRM's) used for this program were: CDN-CM-25, CDN-GS-5L, CDN-GS-10D, and CDN-GS-P6. Each standard was purchased from CDN Resource Laboratories Ltd in 2013. Standard certification certificates are provided in the accompanying digital dataset (Digital Data Compilation\5_Assay Compilation\Certificates).

Several holes drilled through zones of rock so fractured and soft that efficient core recovery was not possible. Samples within these zones were measured from block to block, however it is important to note that if looking only at the 'from – to' depths for a given sample, the true interval length may be misrepresented. For this reason, the 'Comment' column in the DH Sample section of the digital core logs has been populated with a measurement of actual core recovered for any sample in which recovery was 40% or lower. Block to block recovery was measured for each hole in entirety; this data is recorded in the Geotechnical section of the core logs and can be referenced if in any doubt about true sample intervals.

All core boxes were photographed prior to cutting. Core samples were cut using gas powered Husqvarna circular diamond saws with 14 inch blades and placed into sequential numbered bags corresponding to triplicate tags stapled into core boxes by logging geologists. Core that was too soft or fractured to be split with a saw was separated into halves within the box using a stiff flat bladed spatula, then one half placed into sample bag. Cutting and sampling was performed by Edward Charlie, Dwayne Tom and Mike Medcalfe, under the supervision of Gold Fields employees Tim Stubley and Robert Campbell.

A sample list for each hole was provided to cutters on which samples (including blanks, duplicates, and certified reference materials) were checked off as they were cut and bagged. The removable stickers supplied on the paper envelopes containing the certified standards were removed to make the standard pulp packet 'blind' to the laboratory and were placed next to corresponding sample ID's on the printed sampling list as a double check procedure for possible data entry errors or standard switches. Samples were systematically packed into numbered, addressed rice bags. Two staff members performed this process; one packing individual samples into and weighing the rice bags, the other recording the sample ID numbers that were packed into each bag. After double checking the sample ID numbers against the list, rice bags were closed with locking plastic zip ties. Dependent on shipment weight and timing, samples were transported to ALS Minerals Whitehorse either by road, via Mercer Contracting, or air freight via Alkan Air. Samples transported by air were picked up from Alkan Air by representatives from ALS Whitehorse.

A total of 1,535 samples were taken from holes ORO13-01 through ORO13-13. Sampling data and QA/QC analysis was managed by Julianne Madsen. QA/QC results are included in the digital data compilation Digital Data comp\5_Assay Compilation\QAQC.

92 rock chip prospecting samples were collected over the field season. These were shipped to ALS Whitehorse, and assay results provided in the digital data compilation Digital Data Compilation\5_Assay Compilation\SurfaceAssays_Oro_01Oct13.xls).

The samples were prepared (crushed, pulverized and split) at the ALS preparation facility in Whitehorse, Yukon, and after preparation, a pulp split was shipped through the ALS minerals chain of custody protocol to the ALS Minerals laboratory located in North Vancouver for digestion and analysis.

The lab methods used were as follows:

Element	**Lab Method**	**Description**	**Comment**
Preparation	Prep 31	Crush to 70% passing 2mm, riffle split off 250g, pulverize split to better than 85% passing 75 microns	Standard prep method
Au	Au-ICP22	50g Fire assay with ICP-AES finish	Larger charge weight to maximize chances of Au particles being in the crucible
Au (ore grade method)	Au-GRA22	50g fire assay with gravimetric finish	The gravimetric method was only used on the higher grade standards. No regular core sample received this assay method which was set to be triggered at 3g/t
PGE's and Au	PGM-ICP24	50g Fire Assay with ICP-AES finish	Pd and Pt only done for the samples from hole ORO13-01. Au method comparable to Au-ICP22.
Multielement	ME-ICP61	4 Acid ICP-AES, 33 elements	Every sample

DRILLHOLE SAMPLES QAQC:

Four CRM's and one Field Blank material was inserted alternately approximately every 10 samples to provide accuracy and contamination information for the lab work. The CRM information is tabulated below

Standard ID	**Number of samples**	**Grade**	**Certified by**	**Expected value**	**1 SD**
FB (Field Blank)	76	trace	n/a	0.01	n/a
CDN-CM-25	27	Low	30g Fire assay/ ICP	0.228	0.015
CDN-GS-P6	19	Low-med	30g Fire assay/ ICP	0.626	0.037
CDN-GS-5L	28	Med-high	30g Fire assay/ ICP	4.68	0.155

			30g Fire assay/ Grav	4.74	0.11
CDN-GS-10D	2	high	30g Fire assay/ Grav	9.5	0.28

Au Standard performance:

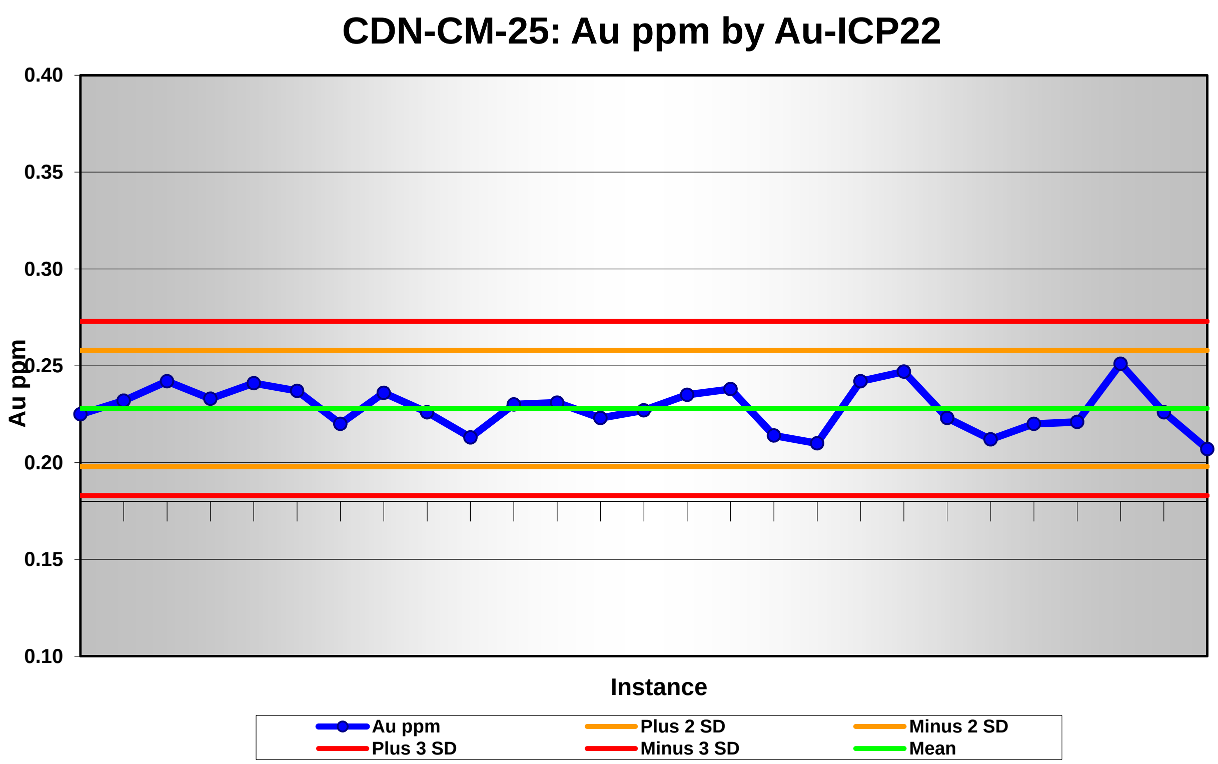
The standard performance for Au was acceptable. There was one case of a switched standard, and three cases of an Au fail by the 'overlimit' ore grade method Au-GRA22, but was a pass for the Au-ICP22 method and was accepted. These standard fails occurred in unmineralized zones and are not of concern to the data quality. The table of fails is shown below.

Hole ID	Standard ID	Batch No	Sample Id	Method	Orig Value (ppm)	% difference from expected	Date Rec'd	Date entered into DBS	Comments	Final Determina tion
ORO13-01	CDN-GS-5L	WH13140527	Q186060	FAOG_GRAV	4.38	-8.23	23-Aug-13	04-Sep-13	accept fail due to overlimit method in unmineralized Zone, regular FA was a pass for this standard, providing appropriate QAQC on adjacent samples. Part of a >2 SD fail in a row scenario with Q186040	accept fail
ORO13-07	CDN-GS-5L	WH13153548	Q186680	FAOG_GRAV	4.35	-7.59	11-Sep-13	11-Sep-13	accept fail due to overlimit method in unmineralized Zone, regular FA was a pass for this standard, providing appropriate QAQC on adjacent samples	accept fail
ORO13-09	CDN-GS-10D	WH13160024	Q186920	FAOG_GRAV	8.61	-9.37	19-Sep-13	20-Sep-13	accept fail due to overlimit method in unmineralized Zone, regular FA was a pass for this standard, providing appropriate QAQC on adjacent samples	accept fail
ORO13-10	CDN-GS-5L	WH13161575	Q187040	FA50_ICPAE	0.641	-86.3	27-Sep-13	23-Sep-13	Fail a result of a switched standard. Is actually CDN-GS-P6 and was fixed in the database to reflect the actual standard, after archiving it as a fail.	switched std- fixed in database

Please find below the standard performance plots for the four standards used in this QAQC program.

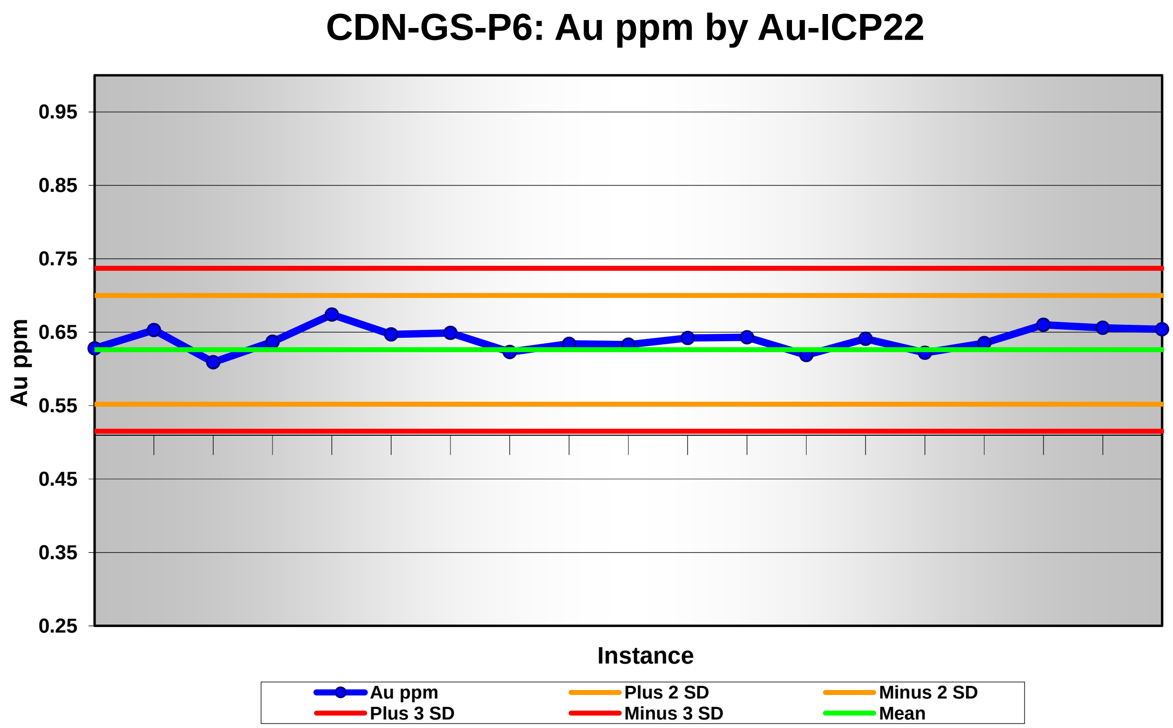
CDN-CM-25

CDN-CM-25 is the lowest grade standard used for the Oro program, and the excellent, unbiased performance of this standard provides evidence that the low grade anomalous Oro samples were accurately measured by the Au-ICP22 method and that for future use, this method is reliable and reproducible. The results are acceptable.



CDN-GS-P6

The standard CDN-GS-P6 is of higher grade than CDN-CM-25 and also was accurately reported by the Au-ICP22 method, although there is a slight bias to higher values for the expected mean. The results are acceptable.

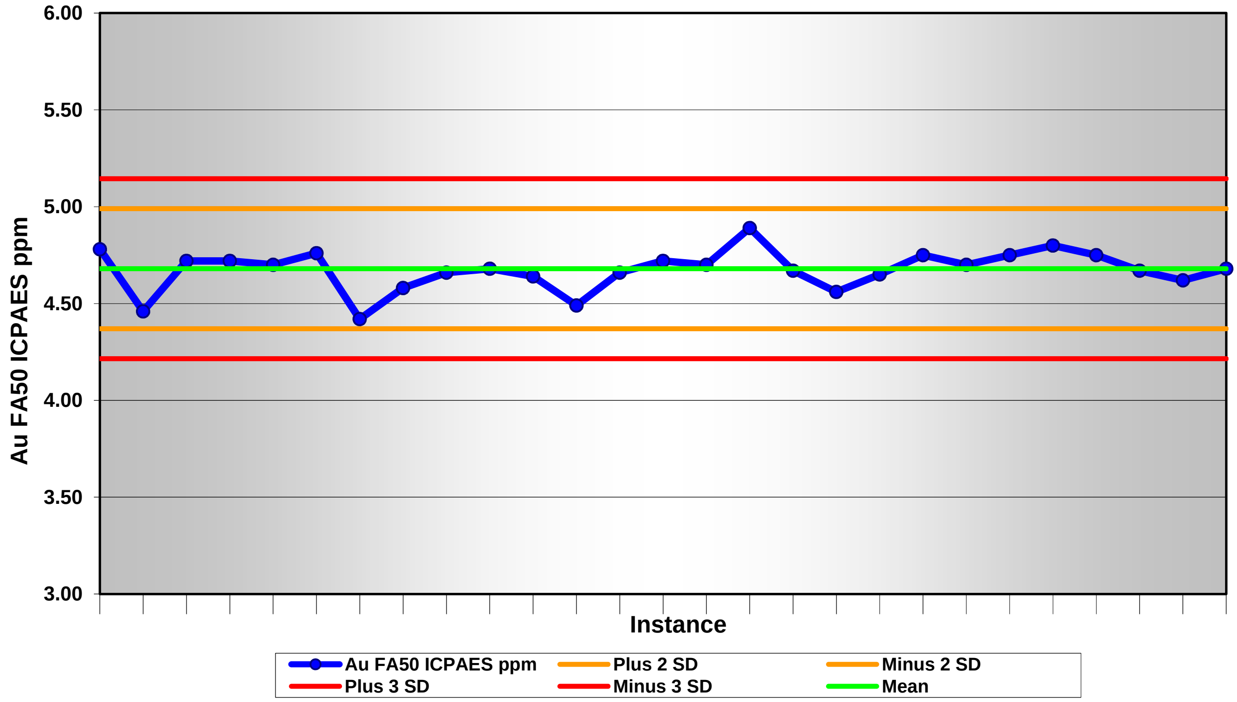


CGN-GS-5L

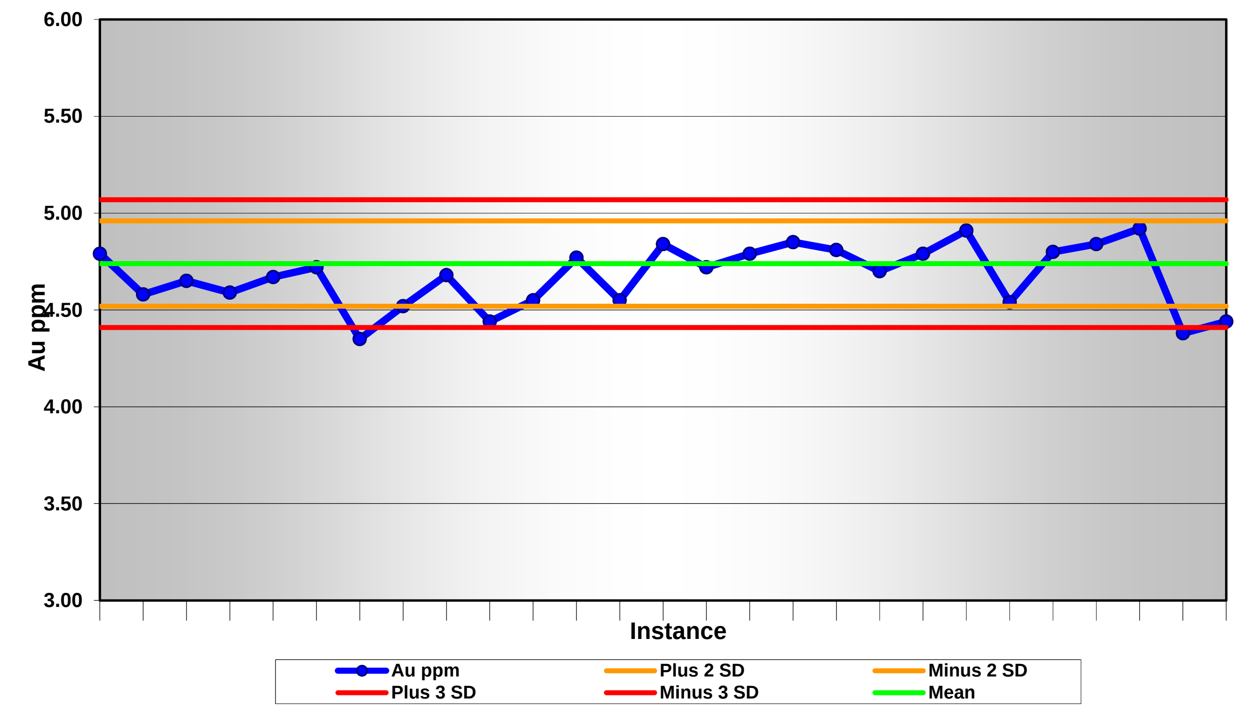
This standard was used as a mid-grade standard to evaluate samples near the gravimetric trigger level and would provide QAQC on two lab methods if required. This standard is certified for two fire assay methods with slightly different certification values (see CRM table above).

The performance by Au-ICP22 appeared more accurate for this standard, and the gravimetric method was less accurate with two borderline low Au fails and a slight bias to the low side of the expected mean. The data for the Au-ICP22 are excellent and no drillhole sample results reached this grade level. The results are acceptable.

CDN-GS-5L: Au ppm by Au-ICP22

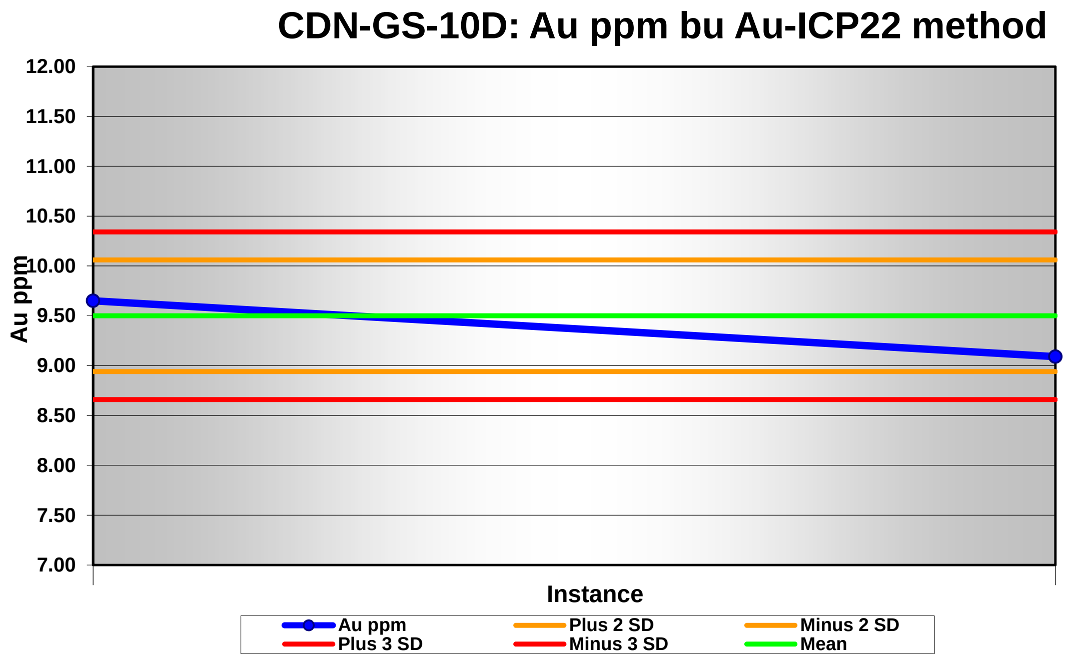


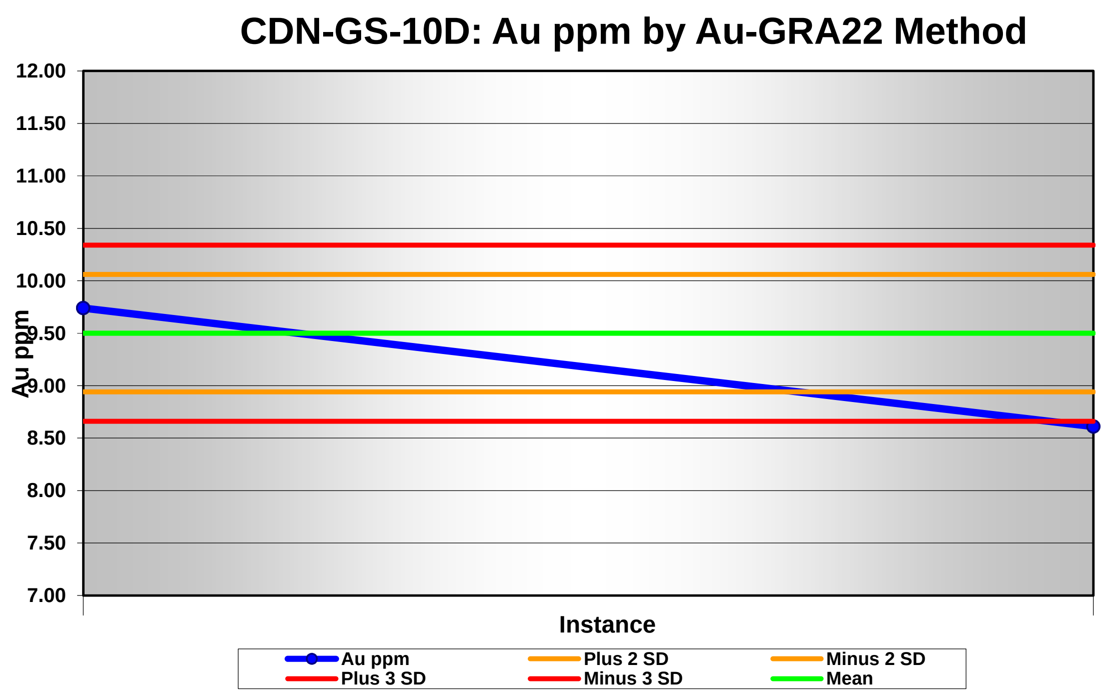
CDN-GS-5L: Au ppm by Au-GRA22 Method



CDN-GS-10D

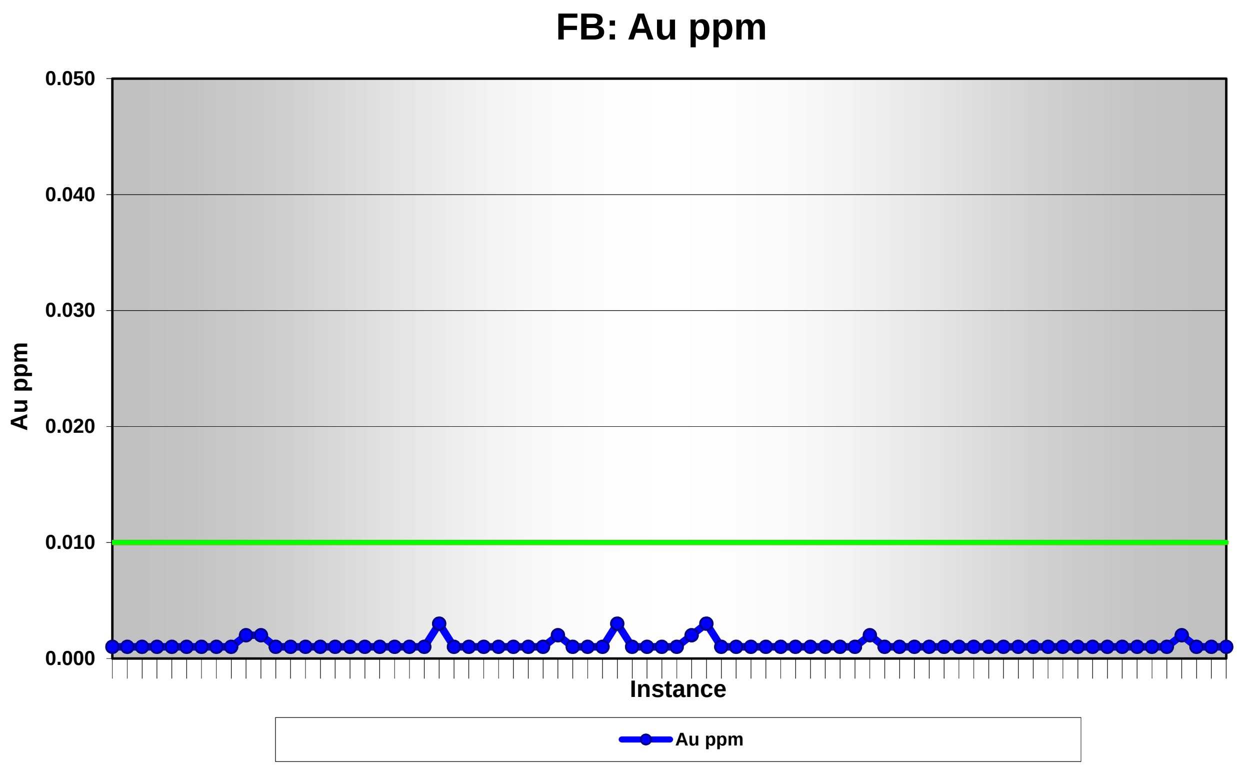
This high grade standard was used twice, and performance was better by the Au-ICP22 method as there was a fail by the gravimetric method. This fail however is not of consequence as the results did not reach this level and the QAQC is provided by the Au-ICP22 method as that is the method by which the surrounding sample values were determined.





Au Field Blank Performance

The blank material used for the 2013 Oro drilling was a carbonate based garden crush beauty stone. Blank Performance was acceptable with a warning level of 10x the LDL.



Au Duplicates

Data from three duplicate types was recorded from the 2013 Oro project to provide some information about sampling error and precision. Low concentration samples dominate the data set, but some comments can be made on the reproducibility of the data regardless. The types of duplicates and the number of each taken is tabulated below.

1) Half-Core field duplicates (FD) samples were taken approximately at a rate of 4%, or 1 in 25 samples.

2) Pulp duplicate lab checks were done by the lab as part of their internal QAQC and were reported on the certificates and datafiles. ALS does labchecks at a rate of approximately 7-10%

3) Preparation duplicates (coarse duplicates from the coarse reject material) was also done and reported by the lab. Generally the preparation duplicates are done at a rate of 1-2%.

Duplicate Type	Number of samples	Comments
Pulp Duplicate (LabChck)	85	Routinely done and reported by ALS
Coarse Duplicate (PrepChck)	20	Routinely done and reported by ALS
Field Duplicate	51	Half core field duplicate

For this small and low grade data set, the duplicate data reproducibility was simply evaluated in plots of Repeat vs. Original results and Mean vs. Mean Percent Difference (MPD). When viewing the mean percent difference plots, a point lying to the right of 0 on the X-axis translates to a higher original value, and it the data point lies to the left, the repeat data point was of a higher value. If the majority of points lie to one side, it constitutes a bias.

The MPD calculation is provided below for reference, and the MPD is generally evaluated as acceptable reproducibility between +/- 20MPD (red envelope on the plots below).

<u>Mean Percent Difference:</u>

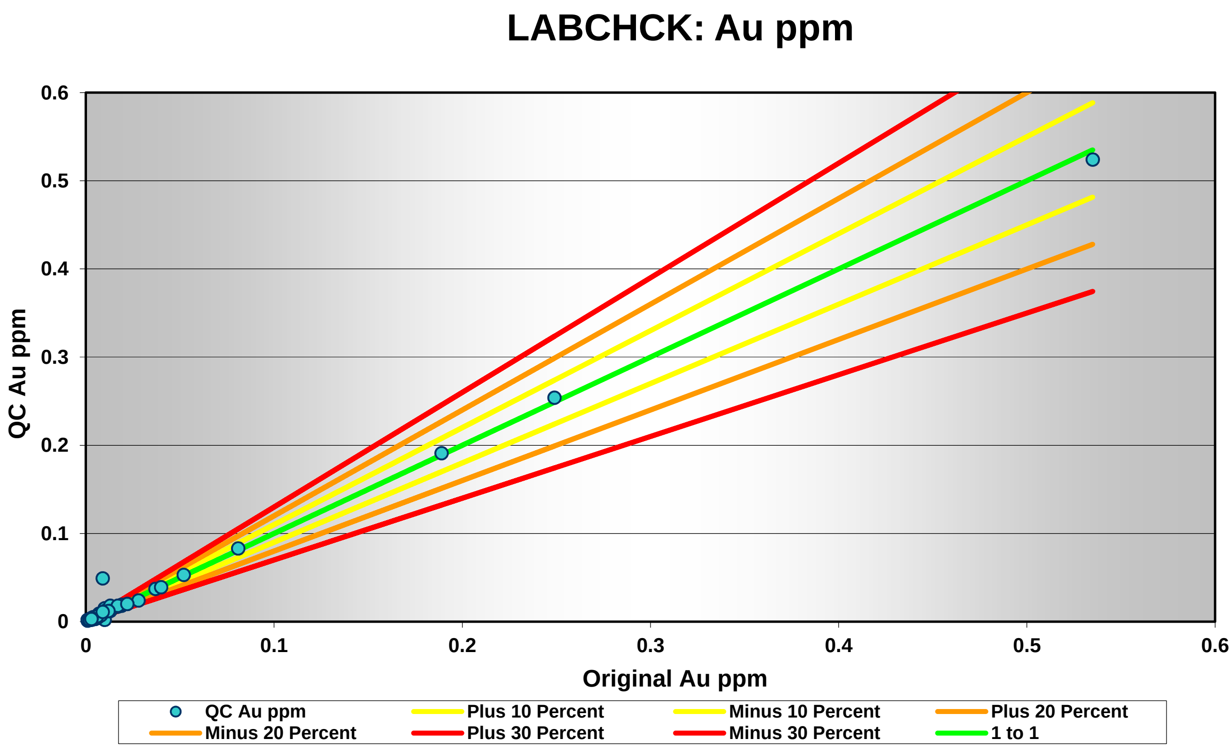
$$\textit{Mean Percent Difference} = \frac{100.0 \times (\textit{Original Value} - \textit{Repeat Value})}{(\textit{Repeat Value} + \textit{Original Value})/2}$$

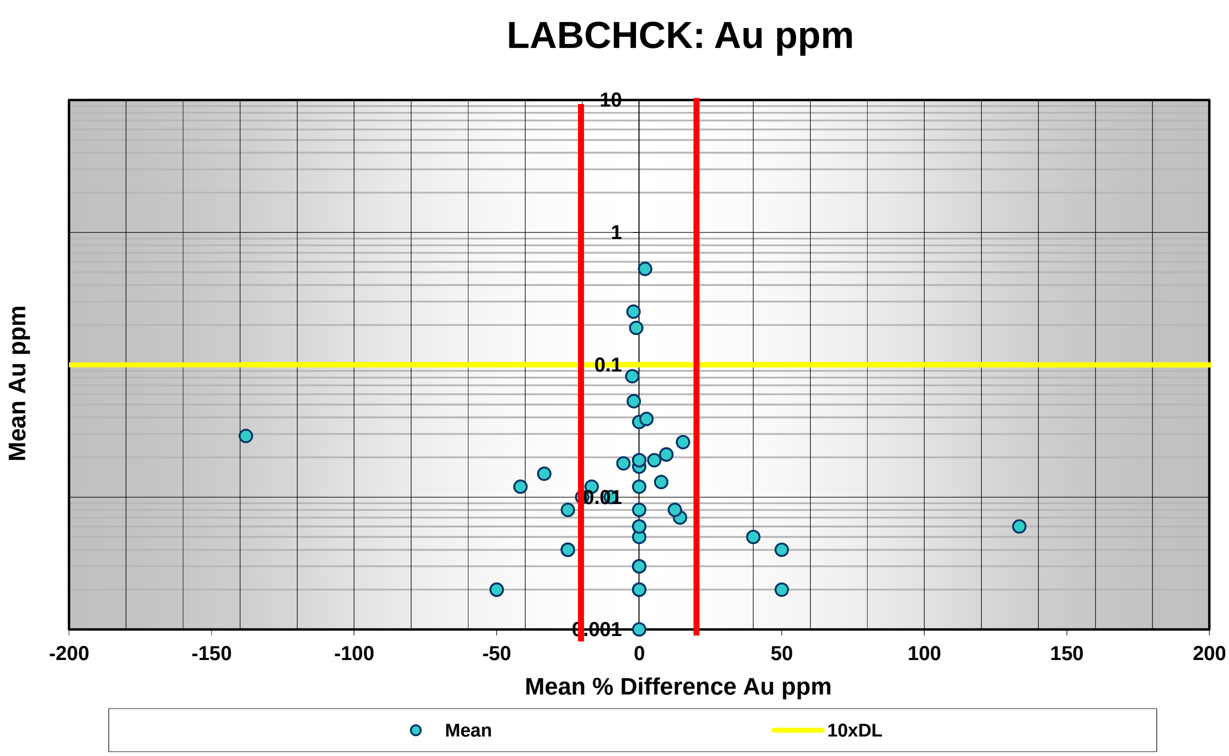
In general, a reference value of ten times the analytical method's detection limit is used for evaluating results that should be reproducible. The lower detection limit (LDL) for Au by the Au-ICP22method used for the 2013 Oro program is 0.001 ppm thus a reference level of 0.01 ppm should theoretically be used; however, a considerable degree of fanning of the data is observed due to the strong effect of small differences on the percentage value below 0.1 ppm (seen in the mean vs. MPD plots). This is not unexpected as it is related to the precision vs. Concentration curve of the method- and does not affect the validity of the original certificate. Considering this, a reference value of 0.1 ppm is used to evaluate reproducible results. The convention of 10X LDL is appropriate for the multielement data such as Cu, but the multielement data was not evaluated I this exercise.

Duplicate data evaluation

Au Lab Checks

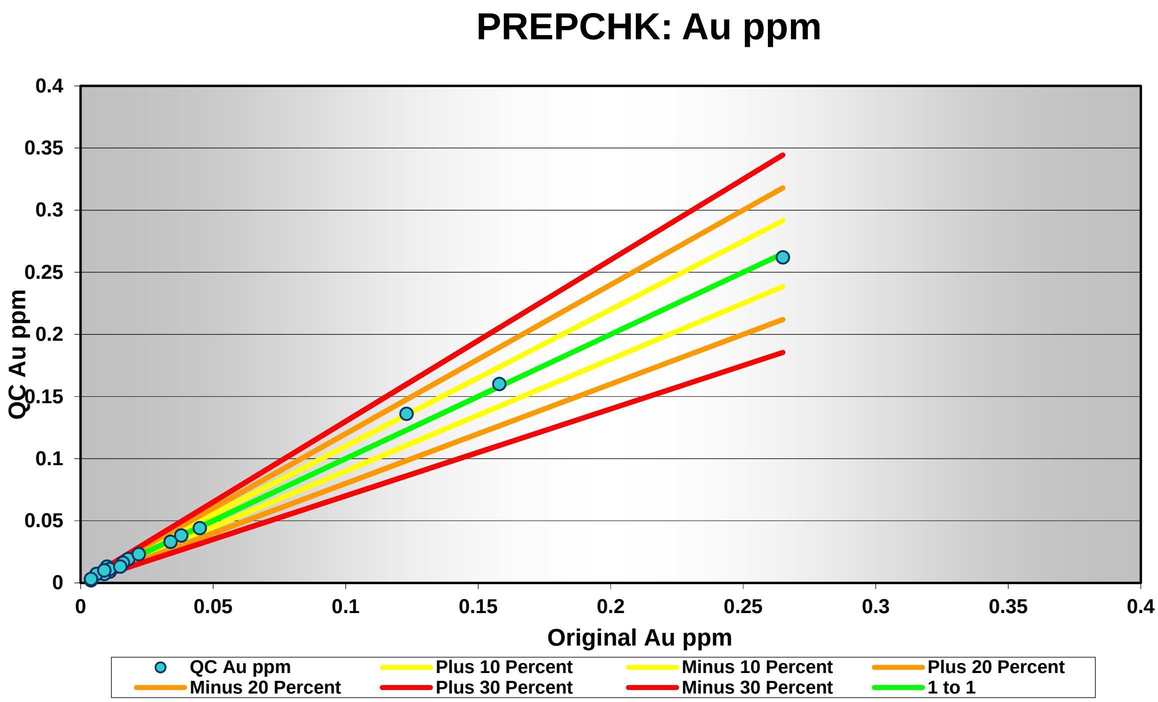
The Au lab checks, despite the low concentration were reproducible within +/-20 MPD above the 0.1ppm reproducibility threshold and were not biased. Nugget does not appear to be a problem in the mineralized pulp samples.

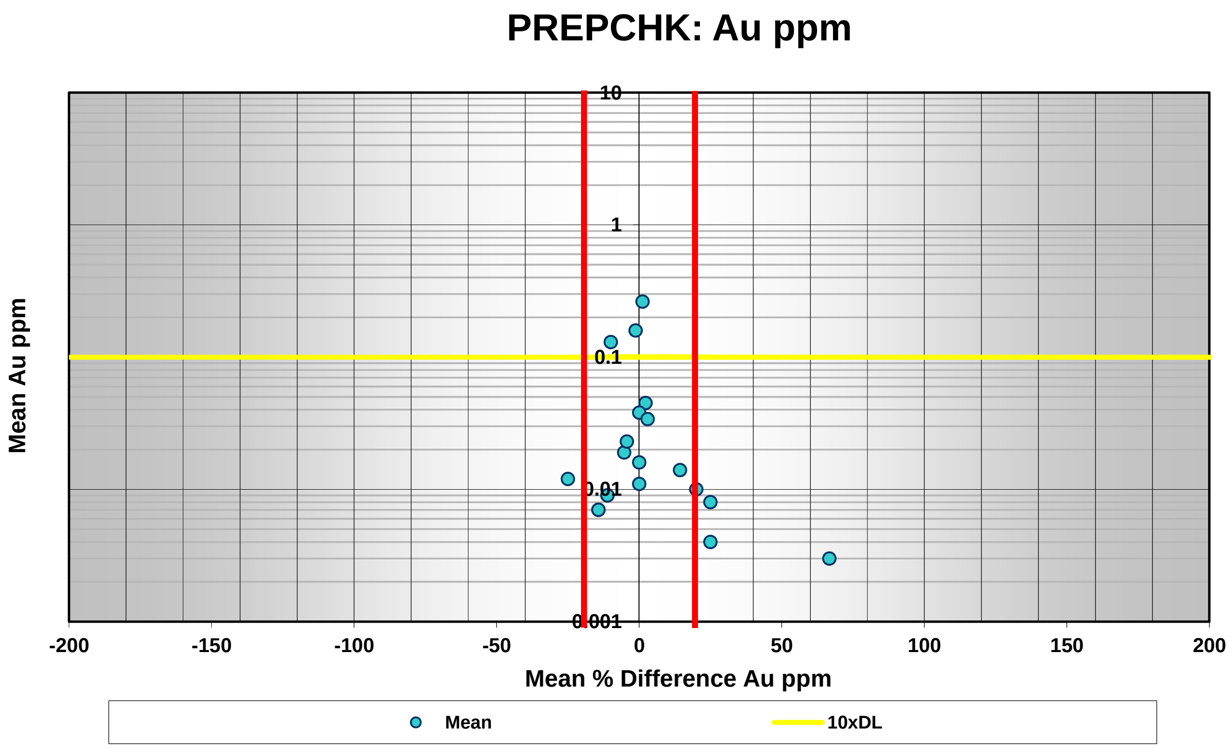




Au Preparation Duplicates (coarse duplicates)

The Au preparation (coarse) duplicates, despite the low concentration were reproducible within 20 MPD and unbiased.





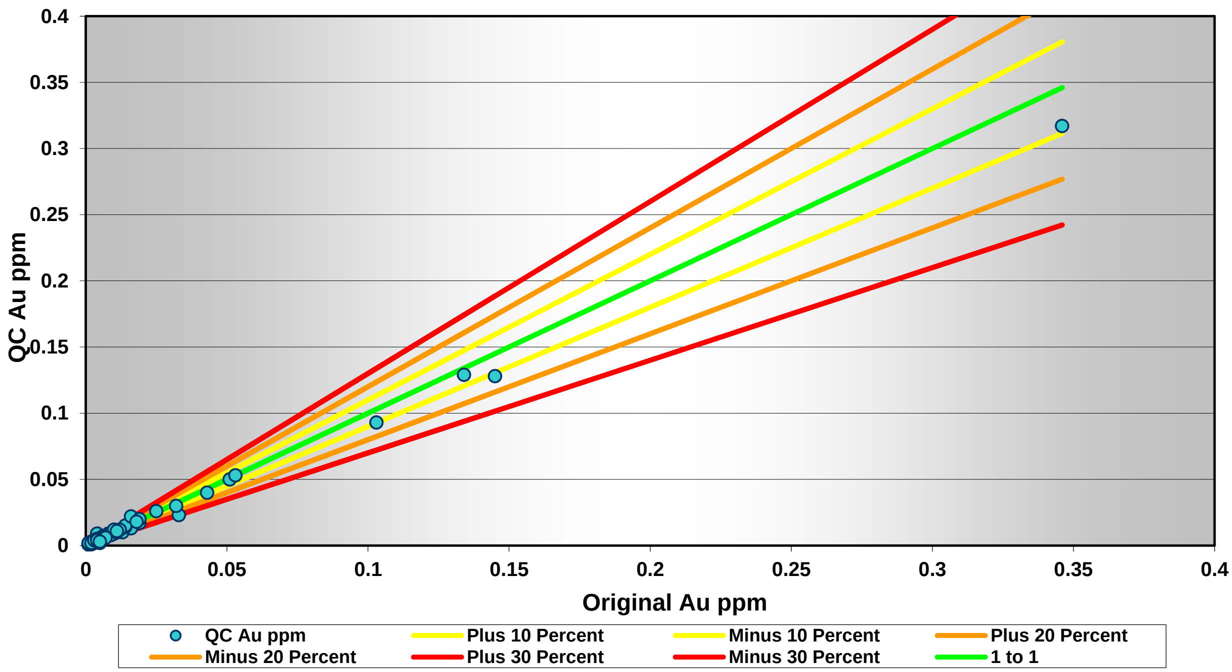
Au Field Duplicates

The Au field duplicates show bias to the original sample result as can be seen on the Mean vs. MPD plot where each of the duplicate pairs above the 0.1ppm reproducibility limit of this Au method plot on the positive side of the X-axis indicating that the original sample result was consistently higher than the duplicate sample.

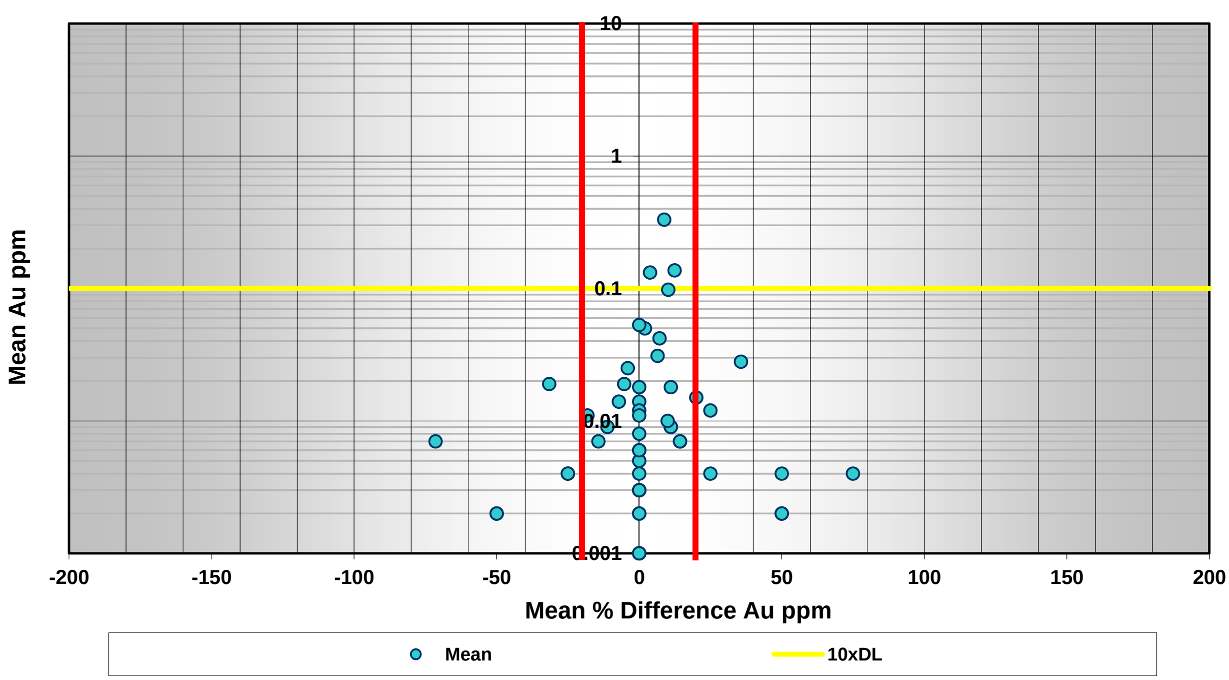
Investigation into the received sample weights showed no consistent or strong sampling weight bias and more data is required. Nugget does not appear to be strong at Oro as these results although biased were reproducible.

Hole_ ID	mFrom	mTo	QC_ Category	Orig_ SampleID	QC Sample ID	Au_Orig_ ppm	Au_Rpt _ppm	Batch No	Lab_ Method	Orig sample Weight	Repeat sample weight
ORO13-07	72.35	73.5	FD	Q186644	Q186645	0.346	0.317	WH13153548	Au-ICP22	6.22	6.25
ORO13-04	163	165	FD	Q186365	Q186366	0.145	0.128	WH13147900	Au-ICP22	3.8	3.12
ORO13-06	268.9	271	FD	Q186562	Q186563	0.134	0.129	WH13153547	Au-ICP22	4.65	4.63
ORO13-09	41.14	43	FD	Q186923	Q186924	0.103	0.093	WH13160024	Au-ICP22	3.49	3.39

FD: Au ppm



FD: Au ppm



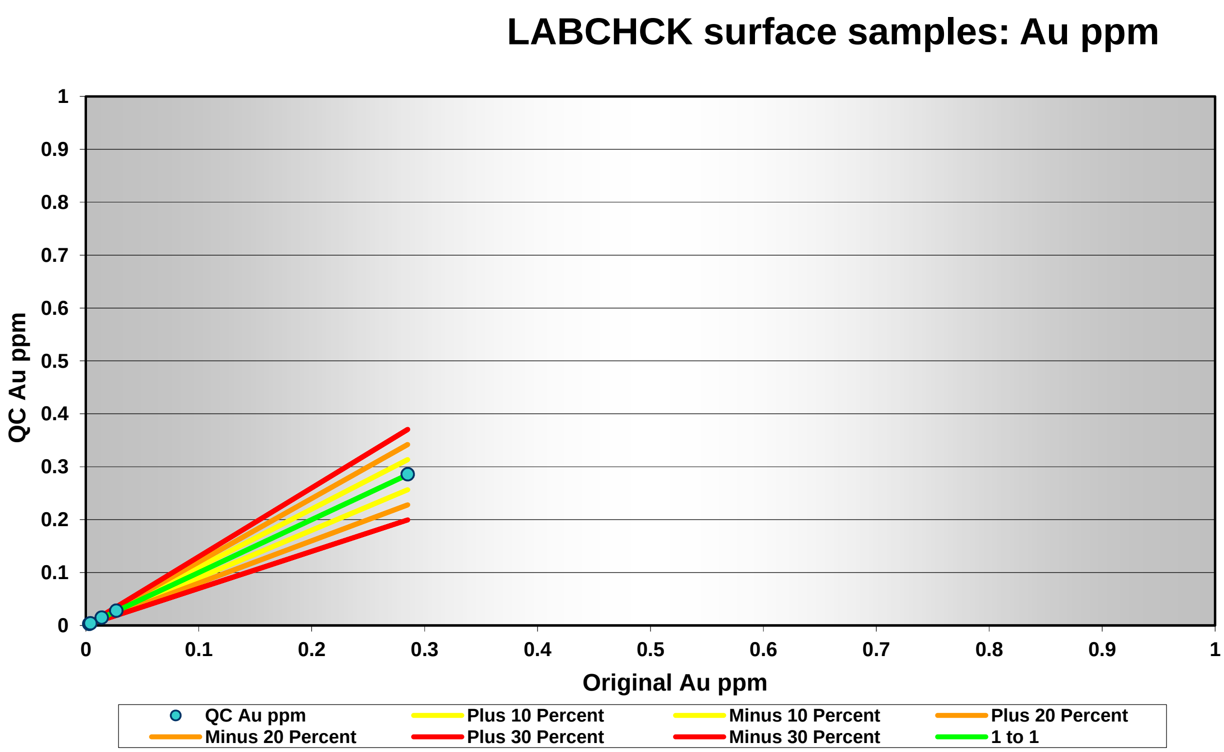
Surface samples QAQC

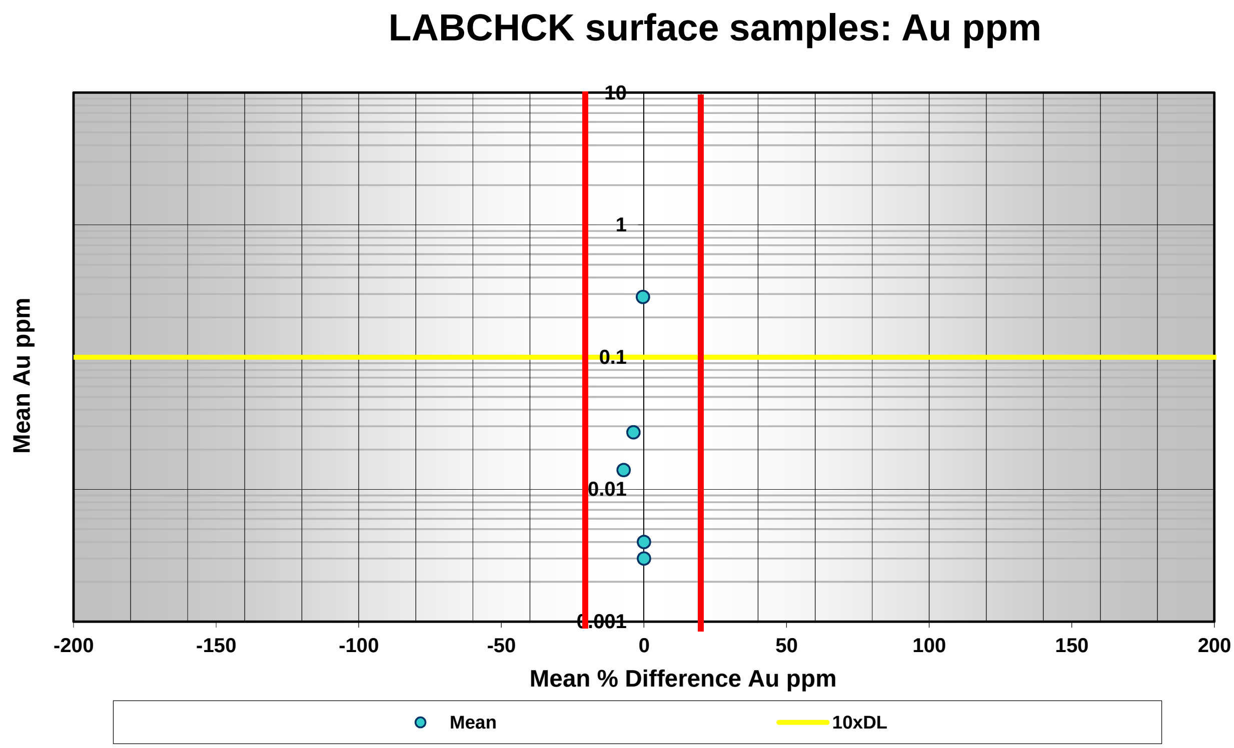
92 rock chip samples were taken as part of the 2013 Oro exploration program, Satandar samples and field blanks were not included with these batches due to the preliminary nature of the testing and as a cost-saving measure.

5 lab check pulp duplicates were reported by the lab with the results shown below.

LabChecks

The Au lab checks show no bias or nugget from the limited data set that is shown below.





CONCLUSION

Although the majority of the data were below the level of reproducibility for the Au-ICP22 method (at 0.1 ppm), preliminary work suggests that coarse Au is not a concern at the Oro project. The standard performance is acceptable and the 2013 data are sufficiently accurate and precise.